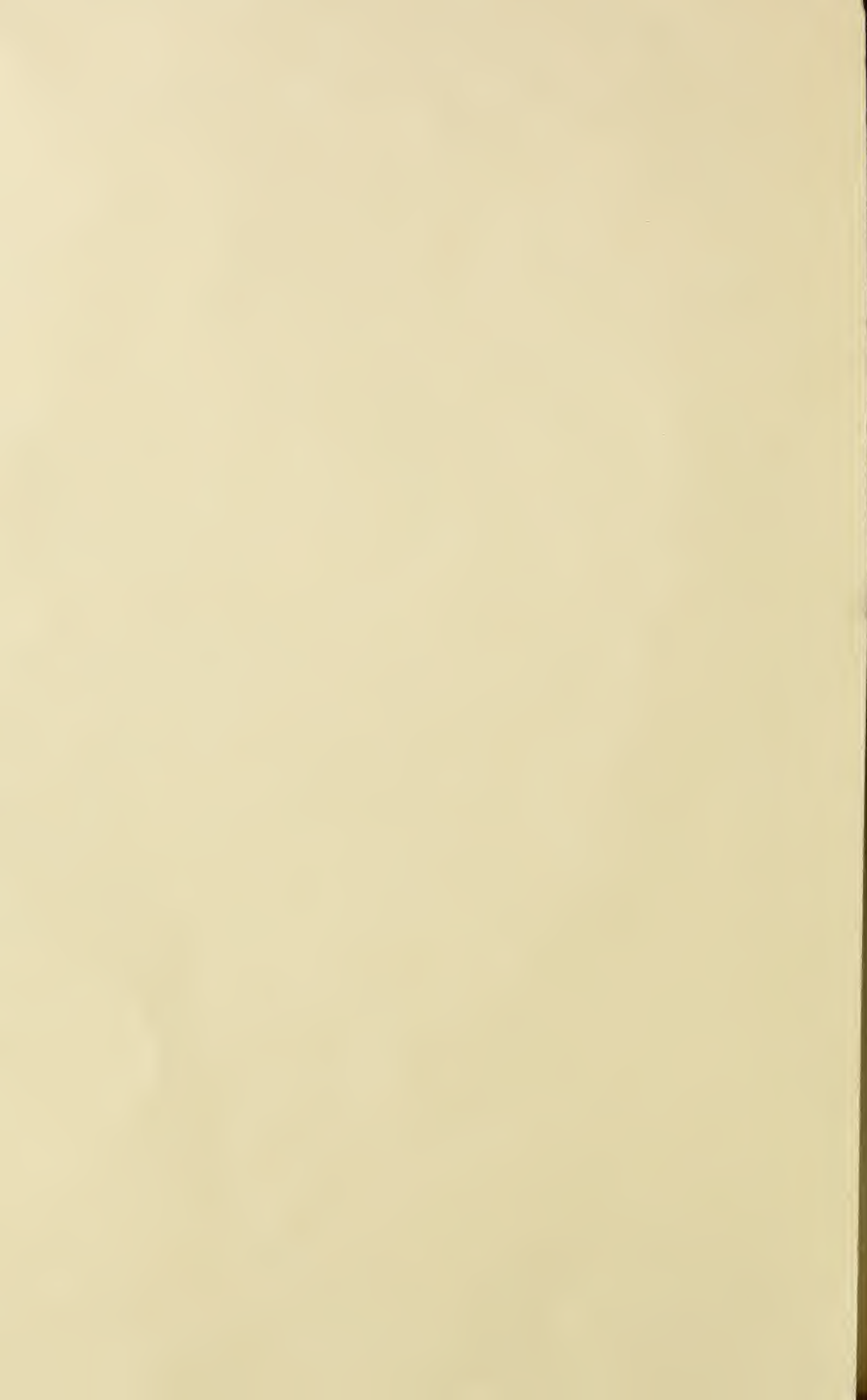


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# THE MARYLAND FARMER :

DEVOTED TO

Agriculture, Horticulture, and Rural Economy..

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## THE NEW CATTLE DISEASE IN THE EASTERN STATES.

There must be something radically wrong in the mode of housing cattle in Massachusetts, or the climate must predispose them to a greater degree than in other States to epidemic diseases. Our readers will remember that about the year 1860 there was an outbreak of Pleuro-Pneumonia in that State which was with difficulty suppressed. The neighbouring States were indebted then to the energetic measures taken by the Massachusetts Legislature for exemption from a disease so infectious and fatal. Attention is now called by the Boston papers to the breaking out of what is known in Europe as the Eczema Epizootica—more familiarly called here the Foot and Mouth disease. This is, as the scientific name implies, epidemical and not local. It is extended and is propagated as in measles, scarlet fever, and other similiar maladies of the human subject, by the atmosphere being, as is supposed, filled with minute spores or germs which are thrown off from the affected parts and are inhaled, and thereby reach the blood. These germs or spores produce in the blood a change or alteration resembling fermentation. The blood is in reality poisoned, and the fever that results is due to the efforts of nature to eliminate this poison from the system. All accounts agree in representing the Foot and Mouth Disease as one of the most easily taken, where herds are close together, of any of the class which comprises only three distinctive types—the Pleuro Pneumonia, the Rinderpest and the Eczema Epizootica. The two first generally terminate fatally. There is for them no known remedy that can be confidently relied upon to effect a cure, except in a very small number of cases. With the last it is different. If ordinary precautions are taken it is very seldom fatal. The great evil to be guarded against is the rapid spread of the epidemic, the danger of the infected animals being slaughter-

ed and their meat entering the market, and the milk of the diseased cows being sold by the milkmen. It is probable that the meat, if eaten, would breed sickness. Although authorities differ on this point, it is well known that when an animal is in a feverish state, even if it be merely from overdriving, its flesh or milk loses much of its nutritive quality and healthfulness. Fever of a not dangerous character has been traced in England, to the use of the milk of affected cows, and pigs have been known to catch the disease from drinking such milk. The Commissioners appointed by the State of Massachusetts take the same view of the poisonous character of the milk. The effect of the disease upon the meat has never been satisfactorily determined, and as there is no necessity for slaughtering the animals, the question is of less importance than it otherwise would be. The conclusion of one authority in reference to this epidemic is, that "while the new disease is alarming from the rapidity with which it spreads, or the temporary loss it entails, there is nothing in it which need cause a panic; the farmers can fight it singly, and perhaps it can be stamped out before it becomes much more prevalent than it is now." His view may be warranted by the result, but it is as well to be prepared, and to know the symptoms of, and the various remedies for, the cure of the disease, in case it makes its appearance. It is highly infectious and is very rapidly disseminated, and in England in 1839 and again in 1869, required the utmost exertions for its complete suppression. The symptoms usually manifest themselves in foot lameness, caused by an ulceration which commences between the hoofs, and ends finally in blisters and suppuration. "The animal instinctively licks the affected part, and thus communicates the soreness to the mouth, from which there is a copious discharge of saliva. The secretion of milk is reduced in females to fully one-third, and in many is wholly stopped. The sick are unable to stand or walk, and at the height of

the disease are most pitiable objects. The disease has its run in about six weeks, and unless strong measures are taken early, many months are required for a complete restoration." As to the remedies to be used. First, one pound of blue vitriol dissolved in one gallon of soft water. With this solution wash the feet of the animal three times daily, and also the mouth and throat internally, with a sponge affixed to the end of a stick; mix occasionally, a tablespoonful of oatmeal and an equal quantity of powdered alum, and deposit it as far back as possible near the root of the tongue. The Massachusetts State Commissioners do not recommend that the above wash shall be used quite so strong as it is applied in England, and do not advise using it in the mouth and throat, but the English use it as given, and contend that it is by no means too powerful, and cures quickly, effectually and without injury. Another remedy recommended is to wash out the mouth with a solution of potash and dilute sulphuric acid; but the proportions are not given. An excellent result has also been attained in some instances, by the simple application of coal tar to the feet once a day.

Finally, the cattle should be kept perfectly isolated, and in dry and comfortable sheds—and the sheds themselves should be thoroughly whitewashed, and the floors sprinkled with a solution of carbolic acid. Above all, on the first symptoms of the disease, either in cattle transported by railroad, or in the cattle yards, or among the local herds, prompt and vigorous action should be taken; or in a short time it will spread rapidly through a district.

**Invest your Money.**—In what? railroad bonds? stock? bank? No. What then? Invest it in permanent improvements upon your farm. In better buildings and fences; in better stock, better tools, more household conveniences, *more manures*. Invest it in those comforts necessary to make your rural homes what they should be—the happiest spots on earth. Invest it in books and in papers, in education, in *religion*. Yes, invest largely in the last article. It is the sheet anchor of our hope and safety in another world.

B. W. J.

**Problem for Young Men.**—A young man asked a gentleman for his daughter in marriage.—The answer was, go into the orchard and bring in a parcel of apples. Give me one-half of the whole number, and to the mother one-half of the remainder and half an apple over, and to the daughter half of the rest and half an apple over, and have a whole one left for yourself; then, if she is willing, you can have her. How many apples must he bring, and what is each one's share?

B. W. J.

Answer next month.

## HOW TO SAVE PEACH TREES.

It is very curious to note in the agricultural papers and in the discussions of agricultural societies, the air with which what is supposed to be new and valuable information is announced, when in point of fact it often happens that although the information is really as valuable as it is claimed to be, it is not new at all, but has been made public years before, though in all probability the rediscoverer may have had no knowledge of the fact. The following is a striking case in point: The *Philadelphia Ledger* recently told its readers of "a discovery of no small moment" which had been made in the interests of agriculture, by Dr. Geo. B. Wood, President of the American Philosophical Society, and formally and very properly communicated by him to the society, and through the latter, to the world at large.

Reflecting on the short life of peach trees generally, but especially in the vicinity of Philadelphia, where after producing a few crops, they gradually but surely die out, Dr. Wood came to the conclusion that this unnatural state of things ought not to be as in his opinion the normal life of the peach extends to from fifty to sixty years. In respect to the longevity of the peach under very favorable circumstances Dr. Wood may be right, but the cases in which peach trees have lived in this country for half a century or more must be rare indeed. The short time they generally live, is however another matter, and he is undoubtedly right in believing that, if properly cared for, their existence may be extended to a much longer time than is common to peach plantations at this day. He is right also, to some extent, in attributing what he calls the defective power of growth in peach trees, to a deficiency of potash in the soil, and the success of the experiment which he made in 1868, to test the truth of his theory was exactly what he might have known before-hand it would certainly be if he had read attentively the *Maryland Farmer*, or its predecessor the *Rural Register*, where the whole matter was exhaustively discussed, and thoroughly proven in the practice of the writer of this article. Indeed the Doctor himself recalls the fact that "fifty years ago he had seen his father put in operation the plan of digging round the base of the stem of the peach tree, a hole four or five inches deep, scraping away all the worms that could be found burrowing at the juncture of the stem and root, and filling the hole thus made with unleached wood ashes." Five years ago the Dr. tried the same plan with equally good results, and the conclusion he reaches is that the potash in the wood ashes furnished the trees the very food for want of which they were dying.

There cannot be a doubt of it. We demonstrated



the same fact years ago. We took an old peach orchard that was dying out, opened the earth about the roots in autumn, filled the holes, which were dish shaped, with unleached wood ashes, and left them open to the action of the rains and frost until spring. As soon as the frost was fairly out of the ground, we filled in the earth about the stems, mixing it well with the ashes, ploughed up the entire orchard, and put it in hoed crops, well manured. In April we tracked the peach grubs through the sinuous channels they had made under the bark, cut them out, and then again returned the earth to the stem. This course saved the orchard. It commenced to flourish with renewed vigor and bore fine crops of fruit yearly, for twelve years longer. Dr. Wood's discovery, is, therefore no discovery at all; but it is not the less important that the fact should be generally known, that the rapid decay of our peach orchard is due in a large measure to the exhaustion of the potash in the soil. That exhaustion where orchards are ploughed every season, as all peach orchards ought to be, operates in two ways. First, through the potash taken up by the peach trees themselves; and second, by the loss of potash carried off in solution from such light porous soils, by leaching rains. The mere necessity of ploughing a peach orchard every year, and leaving the bare soil exposed to the action of the sun and the rain, tend rapidly to deprive it of its fertilizing elements, and is the primary cause of that sterility which is common to all soils so exposed, in which sand predominates.—The remedy is in heavy manuring, accompanied by liberal supplies of unleached wood ashes—some compensation for the outlay being found in the cultivation of hoed crops, beets, carrots, parsnips, at wide intervals between the rows of peach trees, so as to have hoed spaces of clear soil in the intervals. One other, and serious cause of the rapid decay of our peach trees, Doctor Wood did not touch upon. Perhaps he was not aware of it. That is the constant system which obtains of "breeding in-and-in." We use a term that is well understood by farmers, although probably the application of it to the propagation of the peach, is new to them. What we mean is this. The usual practice of propagating choice peaches, is by budding. It has this advantage, it fixes to a certainty the character and quality of the fruit. With seedling peaches the case is altogether different. The tree when it fruits may bear peaches, large size and of the finest quality, or it may produce fruit that is comparatively worthless. Hence, the advantage of budded over seedling fruit. But seedling peach trees carefully tended, with the inferior trees weeded out, will grow vigorously and continue in full bearing for many years after the budded trees have died.—We think, therefore, that it would not only be judi-

cious on the part of our nurserymen, but also profitable, if they would start afresh from seedlings, and after proving the fruit, bud from them only, and thus commence with a new and fresh and vigorous stock, instead of from old, effete, and sickly ones.—We hold that buds taken from generations of trees of the same sort whilst returning the characteristics of the parent trees, also lose a portion of that vigorous vitality, which is exhibited by seedling trees. In brief, that the early decay of our peach trees, and the diseases incident to them is attributable, in part at least, to our system of breeding in-and-in.

### THE CAUSE OF SEX.

The theory, says the *Medical and Surgical Journal*, that temporal and accidental conditions lead to the decision of the sex, has lately received a remarkable elucidation by the botanical researches of Mr. Thomas Meehan. This gentleman, at the meeting of the American Association for the Advancement of Science, last year read a paper on the laws governing sex in plants, in which the theory was propounded that only the highest grades of vitality produce the female sex. He exhibited specimens of the common sweet chestnut, that there were two classes of male blossoms on this tree. One class appeared in the axis of the leaves on the weak branches. These were the numerous white catkins we are all so familiar with on the chestnut tree. They usually fall before the last class opened, and probably had little to do with the fertilization of the female flowers. The female flowers only appeared from vigorous branches. These bore only two or three female flowers, and then, if any matter was to be spared, continued on a weak male spike. If the tree is weakened in any manner, this last class of male flowers is not formed, all of this material then being required to form the chestnuts. When weakness is still greater, no female flowers are at all borne, but all male ones. This is the reason why chestnuts are scarce in some years. He exhibited leaves from a large chestnut tree which had always borne heavily, but only male flowers this year. The leaves were of a mottled yellow and green tint, showing that its nutritive powers were out of order.

This we regard as a most significant observation. It is, of course, a large jump, and one not authorized, from vegetables to the highest vertebrates. But the laws of sex are singularly alike throughout organic nature, and, as we write, a number of facts occur to us in corroboration of the view that imperfect nutrition leads to male, and perfect nutrition to female offspring. The inferior vitality of the male foetus is of itself a singularly striking fact in evidence.

It would seem as if Burns was right when he says that, nature

"Tries her 'prentice hand on man,  
And then she makes the lasses, O,"

## Our Agricultural Calendar.

### FARM WORK FOR FEBRUARY.

It is of course impossible to calculate beforehand whether ploughing can be done in the Middle States during this month. In some seasons, there is a spell of open weather in February analogous to the Indian summer weather of the autumn, and during which time the ground is open and ploughing may be carried on with effect on all but heavy clays—At other seasons, however, and notably so for a few years past, the winters have been comparatively mild and the springs have opened cold and wet. In such cases, of course, no ploughing can be done except on light sands, and the field operations are virtually suspended until the frost is entirely out of the ground, and the soil dries and is in a condition for the plough. It is a great mistake to plough soils when they are wet, and especially such as contain a large admixture of clay. Neither should manures be hauled out over wet lands. The consequences are that in the subsequent cultivation the soil breaks up in compact clods, and the processes of tillage are seriously obstructed. If, however, the frost keeps the ground locked up during February, manures may be hauled over the hard surface with advantage. In such weather there is no loss from fermentation and evaporation, and the business of the spring is advanced to that extent.—Nevertheless, there is much other work which may be done to advantage in February, and which by being done will greatly facilitate subsequent operations. The work of the month is as follows:

#### Manures and Composts.

All the spare time on the farm may now be profitably employed in collecting rough materials for compost. These compost heaps may either be made in the barn-yard or in the field where they are to be used. In the latter case, the manure should first be hauled out, and as rapidly as the materials are collected the compost heaps should be formed. The best proportions for compost are one cart-load of manure to three of rough fibre, put up layer by layer, alternately, the first layer of the compost heap being a good thickness of manure, then a layer of leaves, turf, woods' mould, or muck, or all of them together, then another layer of manure, and so proceed until the heap is completed. Let it remain until fermentation sets well in, and then break down the whole, mix well and cart out.

#### Ashes and Slops.

Wood ashes and the suds and slops of the household are fertilizers of great value, and should be regularly saved. A pit formed at some distance

from the house—not near to it, lest it should generate typhoid fever—will be found of good service. Cast the ashes, the leaves of vegetables, decaying potatoes, and all the seeds and slops into the pit, and let them remain there until it is time to use them. For garden purposes, a mixed compost of this kind, especially if the chamber lye has been poured over it, will be found rich in all the elements of fertility.

#### Out Buildings.

These should be kept regularly in good repair, and as a means of preserving them, not less than as an evidence of neatness, they should be color-washed. The best wash is a mixture of whitewash with yellow ochre or Venetian red. If a grey wash is preferred, use with the whitewash a very small quantity of lamp black.

#### Fencing Stuff.

Continue to get out fencing stuff at every available opportunity before the sap rises. Pile up the stuff to season, and then haul under cover, to be made into posts and rails as occasion may serve.

#### Sowing Clover and Orchard Grass Seeds.

Clover and orchard grass seed may frequently be sown during this month to great advantage. If the snow covers the ground, the seeding may be made on the surface. If, on the other hand, the soil is dry, and has broken into a multitude of cracks, the seeding may go on, a light harrow being passed over the field to freshen the soil and cover the seed. In growing grain, wheat or rye, sow also early, and harrow lightly.

#### Ploughing.

If the season opens early turn out the ploughs and go to work at once; but, as we have already said, everything will depend upon the nature of the soil and its condition.

#### Tobacco Beds.

Attend early to the preparation of seed beds for tobacco. The advantage of early seeding is, that if the first crop of plants should be destroyed, there will still be time enough left to try again.

#### Gates and Bars.

We have already suggested so earnestly and so often the advantages of gates over bars, the little cost at which gates may be made, and how little skill it takes to make them, that we can only repeat our advice, that gates shall supplant bars wherever the latter are in use—no well to do farmer should tolerate bars on any fields that are brought into frequent use.

#### Wagons, Carts and Implements.

Look over these and see that they are all in perfect repair and ready for use at any moment.

#### Store Hogs.

Feed store hogs regularly three times a day.—Feed moderately. Give the hogs good dry sleeping apartments, and keep the pens well supplied with litter to work up into manure.



**Breeding Sows.**

Keep these each in a separate pen. Feed them well, but give no more food than is necessary to keep them in a healthy condition. Supply them regularly with charcoal, rotten wood and ashes, to correct acidity.

**Milch Cows.**

Particular attention should now be paid to milch cows, and, indeed, to all kinds of farm stock.—With the approach of spring comes a growing distaste for dry provender, and a yearning for something green and succulent. Roots and slops and mashies will now be found peculiarly beneficial, and of these they ought to have a mess at least once a day.

**In-Calf Cows and Heifers.**

Attend carefully to these. Feed in-calf cows regularly three times a day; allow them exercise in fine weather in an open yard or lot. Let them have free access to pure water, and see that their food is succulent, though it ought not to be too rich.—Young heifers also require a little extra attention as spring approaches.

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## Garden Work for February.

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If an early supply of vegetables is a consideration of importance to the household,—and who doubts it?—preparations for raising the necessary plants should be made at once. Where there are hot beds—and no respectable farmer should be without at least one hot bed—the matter of forwarding plants is easy enough. Where there are no hot beds, and the family is small, a substitute may be found in the use of shallow oblong boxes filled with sifted mould, light and rich, and placed in the kitchen window, but covered of nights when there is danger from frost. With these simple appliances, plants may readily be raised, and with careful attention will grow sturdy and strong by the time when it will become proper to plant them out in the garden.

**Sowing Seeds.**—In hot beds, after they have been made, and the heat is well up, sow the seeds of early and late cabbages, and of tomatoes, egg plants and lettuce. Where the cultivation is of a higher grade, cauliflower and brocoli seed may also be sown, and celery seed likewise. If there is a spare frame it may be devoted to radishes, or the latter may be seeded indiscriminately among the other plants—a bad practice, but one in frequent use, and justified on the ground that radishes mature early, and when drawn from the bed leave ample room for the plants still remaining there.

**Celery in the Open Air.**—Celery seed may be sown

in a warm border in the open air as soon as the frost is out of the ground. The plants will, however need protection of cold nights.

**Peas.**—Peas, when planted, will stand a moderate frost without injury. It is better, however, to drill them in a little deeper than usual, and thus enable them to get firmer root hold before making their appearance above ground. As soon as spring opens plant a few rows for early use.

**Spinach.**—A rich soil is absolutely essential for spinach—as rapid growth adds greatly to its succulence and flavor. Choose a warm border, well protected from the north winds, and as soon as the frost is out of the ground, manure it heavily with rich and well rotted manure; spade it in deeply, rake all fine and sow the seed thinly in drills, an inch deep and above twelve inches apart between the drills. If frosty weather occurs, throw some light brush and long straw over the bed for a temporary protection to the plants.

**Parsnips, Carrots and Beets.**—The best soil for these roots is a light, deep, rich, sandy loam.—Fresh manure is not good for any of them, as it is apt to make the carrots and parsnips grow forked. With beets it is of less matter, and with the latter also a sprinkling of salt will be found of decided advantage. The drills for carrots and parsnips should be eighteen inches apart; for beets two feet apart.

**Grape Vines**—The vines should be pruned early this month if the work was not done in the fall.—The earlier they are pruned in the spring the better. If pruned later, and especially after the sap commences to rise, there is danger of their bleeding to death. Under any circumstances vitality of the vine is greatly weakened by late pruning. Head back the vines that are too long, reduce the spurs to a single eye, making the cut an inch above the eye. In field culture, leave untouched every alternate cane. Dig in about the roots a compost of well rotted manure, wood ashes and bone dust, taking care not to bruise the roots.

**Raspberry Vines.**—Trim these and tie them up; manure the roots, and fork the manure—well rotted—in about the vines lightly.

**Gooseberries and Currants.**—Prune and top-dress these, and lighten the soil about the bushes. Cuttings may now be set out. They should be taken from shoots of last year's growth. Each cutting should be from twelve to fifteen inches long. Cut out all the eyes but three or four that are to form the future head. Plant the cuttings in a well prepared bed and in a situation where the young plants will be shaded partially from the noonday sun.—Water freely until the cuttings strike root.

He who by the plow would garner gold,  
Himself must either drive or hold.

## NOTES AND COMMENTARIES.

BY PATUXENT PLANTER.

**Dogs and Sheep.**

"*Beware of Dogs.*"—Apostle Paul to the Philippians, in chap. iii, verse 2, says "beware of dogs, beware of evil workers." In contrast, our Saviour says "feed my sheep." The Redeemer using the simile as most appropriate to designate his pure, humble followers—innocent and blameless. The Apostle using the term dog as significant of the "evil worker." While the dog is often a trusty, faithful friend and guardian, he is the most destructive and vicious, when so inclined, of all animals, and when rabid is the most to be dreaded, being then in a state to impart the most awful disease to man and beast which has ever been known to bring certain death in its most excruciating and horrible form. The sheep, is of all creatures made for the use of man, the most quiet, inoffensive harmless and useful. It affords him clothing and food; injures nobody, and commits no trespass, if properly cared for, while its sustenance requires less cost than either cow, hog or horse. The same land will produce more meat and wool than milk, beef and butter. Mutton is not only a luxury, but is a cheap and convenient meat; in ordinary autumn and winter season it will keep sweet for cooking four to six weeks, and longer if cold weather, thus the housewife can be sure at all times of having a healthy, delicious dish ready in a few minutes to set before an unexpected and late visitor. In our State, sheep live and do well on grass alone, and corn-fodder, straw or hay in winter. They seldom receive a feed of grain of any kind, unless perhaps during a long continued snow.

Now, while this inexpensive and careless method of keeping sheep will enable them to do well and prove profitable, if not interfered with by dogs, it is not the sort of keeping I recommend. If they could be protected from dogs, I would say, to derive the highest profit from raising sheep, they should be either pure blood or high grades of one of the three best breeds—Southdown, Cotswold or Shropshire—and be always kept in fine condition by being never stinted in food and water. Care and generous feeding is true economy in breeding the better classes of sheep. Housing this animal in our climate is deleterious, as experience has taught and teaches daily. To protect them against storms and wet, they should be provided with a shelter open to the south. Under this shed should be often spread straw or leaves to keep it clean and dry for the sheep at will to resort for repose and comfort, and here ought to be racks with hay or fodder, and a trough where they could be fed once or twice a day at a regular hour

with roots or a gill each of corn or two of oats, and salt as often as necessary; pine or cedar boughs or limbs furnished them sometimes—they are very fond of these resinous evergreens, and it seems to have a very favorable medicinal effect upon them. They ought to be allowed free access at all times to pure water. "Once on a time" it was thought they required no water, as it is well known they will live a long time without water, but that, like other barbarisms, has long been exploded. But what is the use of making these provisions for a beautiful flock, if they are to be killed, torn, mangled or frightened half to death, nightly or daily, by every worthless cur of every worthless negro or vengeful white man who chooses to satiate his appetite or gratify his curish proclivities, and protected afterwards by his kinship master under color of the technicalities of the law. The only remedy, the only safeguard is, until we can get a dog tax, for owners of flocks to support each other, and use their guns fearlessly and strychnine freely. To obtain an effective dog law, let every man who feels an interest in this important branch of food production, demand of his next representative in our Legislature this relief of the sheep raiser from the great wrong he now labors under. Every man who wears woollen clothing or sleeps under a blanket; every poor man in town or country who desires wholesome cheap meat for himself and family; every free liver who enjoys a chop or saddle or leg of mutton; every one who has an eye for beauty and innocence, should compel by united voice the politicians to do justice to our farmers in this particular, and abandon their former practice of fearing to offend those few voters who keep dogs they deem too worthless to pay a tax on. "Consistency, thou art a jewel." Our politicians will tax the horse, the horse that makes the bread, and the cow that gives the milk, for the support of the family of one poor, industrious man, but are afraid to tax the sheep-destroying dog of another poor man, who is idle and as non-producing, and, perhaps, as mischievous as his dog. I write feelingly on this subject, for the dogs have forced me to sell my Southdown flock—my beautiful pets.

**Bees.**

Among the delicate and beautiful industries which yield pleasure, knowledge and profit, suited peculiarly to the gentleness of woman, is the management of bees. Every lady should have an apiary. I have known young ladies who have spent hours in looking at their bees industriously laboring with a precision and skill that no human intellect or hand could successfully imitate; studying their habits and admiring the order and discipline prevailing in the government of their colonies, remembering at the same time that these bee colonies are governed



entirely by one female. Perhaps it was in this way the "Woman's Rights Party" was started, reasoning from analogy, that if one little queen could govern such a host of fellow beings, why should not one little woman govern not only one man and a lot of little folks, but a host of men folks. But if that is to be the result of bee-keeping, I counsel my fair friends to let bees alone, for they might be stung while indulging in their Utopian reveries. It is a highly interesting employment, and of great profit. At present prices of honey, every hive well attended should yield not less than from \$50 to \$100 per annum. At this rate, little lady, what a heap of fine dresses, ribbons and gew-gaws ten or a dozen hives would afford you.

But before one begins to raise bees, let him or her get a good book or books on the subject—Quimby and others—and study. Bee-keeping is an art, a science, and, like everything else, to become very profitable, it requires attentive industry, theoretical knowledge of the subject and practical experience, the latter only to be gained by assiduous reduction of theory to practice. If bees are highly profitable to the apirians in the North, and even in Canada, where they can only work five or six months, how very much more profitable ought they to be with us, having nine months for work. The best bee-keepers say water should always be at hand, for they consume a great deal of water. It should be kept in very shallow pans. Salt ought always be where they can get a supply. They are as fond of salt as are pigeons. One gentleman says his bees consume as much as a gill of salt to the hive per month. We have a great deal to learn about the proper treatment of this "little busy bee," emblem of industry, to make its labors of the highest profit to us. And as it is one of the most interesting studies any one can pursue, I hope our ladies will turn their attention to it. I know a person, with few hives, who uses an abundance of this delicious food—honey—in his family, and sells enough to supply the house with all the groceries needed for the year. I have seen many hives, but the least complicated and most satisfactory, giving a full view of the bees working, with the least inconvenience to the bees and the looker on, is James Wood's Hive; he has had much experience with bees, is an ingenious mechanic, and makes the hives for sale. His address is Collington, Prince George's County, Maryland.

#### Hon. Horace Capron.

In the "Congress of the Cotton States," which assembled at Augusta, Georgia, last October, the Hon. Horace Capron, Commissioner of Agriculture, delivered the most eloquent, practical, frank and downright honest address I have almost ever read.

It was concise, clear and earnest in the expression of broad, comprehensive, statesman-like views of the condition of agriculture in that land of inexhaustible resources, at the same time entered into minute details, supported by facts and figures. He urged a restorative rather than their present exhaustive system—to produce more and buy less; to manufacture their own cotton—showing to them the wonderful natural advantages they had in their gigantic water-power, and the millions that would be gained by them in exporting the manufactured over the raw material; and, lastly, he urged them to "give profitable labor to all their people," contending that the true practical question of the day was not "where to get more labor from," but how to utilize that they already had. Now it strikes me there is much in this sentiment. It is a matter which may well be pondered over by our State and County Immigration Societies. I should like to dwell upon this point, but must defer it to a more "convenient season." He urged the adoption of a system of mixed crops, or a diversity rather than a specialty in production, with much power, and has also exposed their present helpless dependence on strangers for the commonest manufactured article, even down to their hoe-helves, and showed the importance of their raising their own meats and bread-stuffs, and how easily they could become independent of their neighbors by producing themselves more and buying less of those articles they can produce with so little cost. I have no doubt this address will have great effect in directing the awakening energies of the Southern people in the right channels for the augmentation of their power and the increase of their posterity.

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PEAS FOR PIGS.—Few things would pay a grain growing farmer better than to raise peas for pigs. No matter how "buggy" the peas may be, the bugs or beetles remain in the peas until about the 1st of November; and when the peas are fed out before this time, the pigs will eat peas and bugs together, and there will be little loss. Nothing makes firmer or better pork and lard than peas, and the manure from pea-fed pigs is exceedingly rich. A heavy crop of peas, too, is a valuable crop and a fitting one to precede winter wheat.

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TO IMPROVE PASTURES.—For the improvement of pastures the *Ohio Farmer* recommends that they be divided, one-half stocked with sheep, and the other half with cows, and alternate changes made every spring; or by an entire change from cows to sheep and from sheep to cows every few years, always retaining a cow or two for family use. The two however, never to run together.

*For the Maryland Farmer.*

### WRITING FARMERS.

BY D. LAWRENCE.

Among the remarkable events which have occurred during the last fifty years in connection with the progress and improvement exhibited on every hand the development of the intellectual aspects of agriculture occupies a prominent position. Looking backward at the ages that have passed away, we find that art and science, war and theology, law and literature, have had their able champions to make loud-voiced claims upon the homage of posterity. But how many tillers of the soil have asserted their right to fame. Previous to the period above referred to, we perceive the husbandman the most important member of the social compact—the humble tenant of its lowest position, a contributor to the sustenance and comfort of his fellows, they made him in return their abject thrall. Having no part in the formation of laws, he was governed by such as were imposed upon him, prevented from owning the land he tilled, his life was one long struggle to secure predial tithes for an exacting hand. But how has it been since this period began, and how is it now. An examination of the rolls of legislative, conventional and popular assemblies exhibits a large proportion of those whose vocations are recorded as “farmers.” Indeed, so rapid have been the strides of the intellectual element in agriculture that it is safe to declare that men in this fair land of ours are guiding the plow, who are qualified to direct the destinies of a State or Nation, and this brings us to enquire the cause of the vast difference between those times and ours. It is not civilization *per se*; the change came with the advance of civilization but there was civilization in those times.—Art, oratory, science, literature, spoke then with the voice of those who speak as masters yet, although centuries that were young then, have grown old and departed. This intellectual element must look to the establishment of agricultural periodicals as the prominent cause of its remarkable development, and the choicest fruits at the great feast of ingathering, should be laid upon the altar of the agricultural press. Intelligent farmers generally acknowledge their indebtedness to this great agent of improvement, and the object of this article is to stimulate that large and rapidly increasing class to give substantial proofs of its gratitude by communicating to the agricultural press the results of its practices. The office of agricultural literature is two fold; first, and chiefly, it acts as a recorder of the results of actual practice, and secondly, as an exponent of the theories affecting them. The editor in communication with the great head of agricultural science, has at his command every new idea which the

science evolves, and unless he receives a report of the results of the application of these ideas, so far as practical, (I mean money-making) agriculture is concerned, they are worthless, and where an individual experience qualifies him to impart information, in view of the vast amount of instruction he has received from others, it becomes his duty to do so. Again, no farmer can communicate his views to the press without becoming a better farmer. More care will be taken in the processes of his system that they may exhibit greater returns and that the account thereof may be true and accurate. More experiment will be made, to open new paths for the operations of a successful husbandry, and the practice will have a tendency, by developing the intellectual, to alleviate the burdens of the physical man; it will dignify the principles, processes and labors of that vocation upon whose excellence and strength, as a corner stone, depend the efficiency of all other pursuits which, with that, form the fair proportions of the social edifice. At once the setting and the support, it will become the ornament of the other employments, which, with that, produce the beauty and brightness of the social diadem. By a union of the intellectual with the physical features of agriculture the result is, individually, a well developed man, and collectively an improved society, exhibiting in the rural districts, where there is the greatest deficiency and the strongest need, the force which purify and refine mankind.

To sum up the argument, I have endeavored to demonstrate that farmers should subscribe, support and write for the press devoted to their interests; first, from gratitude; second, from the necessity which exists of receiving that kind of information, third, from duty, and lastly, from a sense of the personal advantages to be derived therefrom. Need I say more to any person anxious to contribute his share towards the success of the grand army of agricultural regeneration, which is laboring so nobly over all the land for the exaltation of the farmers pursuit. The farmer will argue that his education and habits disqualify him from doing justice to his experience in a written article; grammatical exactness, a euphonious style, is not what is asked, simply, facts, the editors will make any alterations necessary to give them an attractive appearance, and with this co-operation of each with the other, with the large addition to the active force indicated in the December number of the *Maryland Farmer*, we may hope that great progress will be made towards enabling our Maryland to occupy the proud position she is qualified to fill—that of the central garden of the national domain.

A good farmer will never be satisfied with his farming until he is confident his land grows better every year.



## Bones and their Reduction and Application.

A correspondent in Essex county, Va., addresses us the following letter, seeking certain information:

To the Editors of the *Maryland Farmer*:

In looking over my *Farmers*, I find Mr. Francis H. Grooms was the successful competitor for the best improved farm in Maryland; you state he used ground bone exclusively. I write to know through your journal—if you know—how he applied the bone? Did he put them on the land direct from the mill, or did he carry them through any process to prepare them for the land? If so, what is that process? as I suppose it is no secret, as he is a farmer and not a dealer in fertilizers.

Last winter I bought one ton 2000 lbs. Ground Bone, I mixed it with two measures of unleached oak ashes, to one of Ground Bone; after it was mixed I threw on water, and made the mass up like plasterer's mortar—threw it all in a heap till it got quite warm, then dry it down and put four to one of rich woods' mold and earth and thrown in heaps again, till my corn was ready to take the dirt; then I spread it on with very good effect. I propose to use the same this year, with the addition of half ton of refuse salt to the bulk, as I mixed it the last time, which I think will be advantageous in a dry season. Would you suggest plaster, also, and what quantity? I applied last year about 40 bushels per acre, but think sixty would be better, or even one hundred still better.

### ANSWER.

We should take it as a favor if Mr. G. would answer our correspondent in detail. He can do so with so much more accuracy than ourselves, and his personal experience in the use of bones are of so much practical value to all who are engaged in farming pursuits that we should feel under an obligation to him if he would oblige us with a communication on the subject.

Our Virginia correspondent is nevertheless doing really good work in the way of improving his land, without extraneous assistance. He has undoubtedly chosen the proper means of improving his farm, although we think he might have rendered the bones more quickly soluble, by first submitting them, after crushing them as fine as possible, to fermentation, in a manure heap. After the fermentation ceases, withdraw the bones, which will then be quite soft, and mix them with the ashes. A simpler but rather more expensive mode is to reduce the bones by putting them in a hoghead and pouring over them sulphuric acid, diluted with three times its bulk of water—at the rate of sixty pounds of undiluted acid, to every four bushels of bones. The heat produced by the acid speedily softens the bones, and reduces them to a pasty mass, which can then be mixed with the ashes, mould, &c., in the proportions described by our correspondent. The salt is a decidedly valuable addition to the mixture, and if the bones he speaks of are *fresh green bones*, we should certainly advise the addition of plaster, as such bones con-

tain ammonia. On the whole, we cannot think that a correspondent who has already gone to work so intelligently can err much in his processes. He has in the phosphate of lime of the bone, and in the potash of his wood ashes, and in the ammonia generated by green bones all, or nearly all, the elements which most soils require, and a little additional ammonia would give him what the sellers of phosphatic manures style an "ammoniated phosphate of lime."—This, with the salt and plaster added, cannot fail to make a powerful fertilizer, and if properly reduced and the relative per centage of each ingredient made equal to the quantities purporting to be found in our best commercial fertilizers, could not be bought in this market for much less than sixty dollars a ton.

### A SUPERIOR FERTILIZER.

Every farmer should contrive in every possible way to increase the amount of his fertilizing material from year to year. The following we believe, in some respects, the most valuable recipe in existence for an artificial fertilizer for all the cereal grains and root crops. With one barrel of pure, finely ground bone, mix a barrel of good wood ashes; during the mixing add, gradually, about three pailfuls of water. The heap may be made up on the floor of an out-building, or upon the barn floor; and, by the use of a hoe, the bone and ashes must be thoroughly blended together. The water added is just sufficient to liberate the crustic alkalies, potash and soda, and these react upon the gelatine of the bone, dissolving the little atoms, forming a kind of soap, and fitting it for plant food. In this way the most valuable constituents of bone can be immediately made available, and the addition of potash and soda aids in the formation of a fertilizer of inestimable value. The water added is not sufficient to make a pasty mass, difficult to dry, but is enough to liberate the strong alkalies from the ashes. This preparation is so clearly convenient and useful, every farmer should prepare as much as possible for his crops during the coming season. A little placed in a hill of corn will work wonders. It is excellent for garden vegetables, and for all kinds of roots. It must be used in small quantities, or in about the same way as the so called super-phosphates. A barrel of this mixture is worth two of any of the commercial fertilizers, and the cost will be about half as much. If the bone-meal and ashes are very dry, four pailfuls of water may be required; but care must be exercised not to have it inconveniently moist. It will be ready for use in a week after it is made. Pure, raw, finely ground bone and the best of ashes should be employed.—*Deitz's Farm Journal*.



*For the Maryland Farmer.*

### Making, Repairing and Oiling Harness---Painting and Repairing Farming Implements.

A well timed and a very sensible article appeared in one of the back numbers of the *Maryland Farmer*, some months since, recommending farmers to make and repair their harness—a duty that could be accomplished during long winter nights, and stormy weather. The author's plan is to use rivets, instead of wax-ends. A punch, riveting hammer, and three different size rivets, would be all required. A farmer would thus (the writer says) save 50 per cent. and produce about as perfect work, as if purchased of a sadlery at the usual rates of charge.

#### Oiling and "Shining up" Harness

ought to have attention during the winter months, preparatory to being used the following season.—With all deference to the authors of the two recipes in the last December number of the *Maryland Farmer*, headed "Preserve the Harness" and "Varnish for Harness," permit me to say that the first recipe will do tolerably well, the second, in my estimation, is ridiculous. Author, number two, says: "half pound Indian rubber, one gallon spirits of turpentine, and an equal quantity of linseed oil." Spirits of turpentine is a powerful dryer and astringent; if applied to leather the leather will be rendered, in my opinion, as hard and as dry as a shingle. As I have considered those two recipes, in part, it is right to suppose I will be called upon for a better. I have applied the following mixture to my harness and boots, since I arrived at man's estate. In the first place, soak the harness over night—then scrub off with a stiff hair-brush, warm water and soap. Apply warm, the following mixture: 6 oz. bees wax, 4 oz. rosin, 4 oz. spirits of turpentine, 1 lb. tallow,  $\frac{1}{2}$  lb. mutton suet, 2 oz. burgundy pitch, and 4 oz. linseed oil. The mixture will be improved by adding 4 oz. indian rubber, and probably the glutinous substance issuing from boiled calves or pigs feet; when the wax, tallow, &c., are dissolved, add the turpentine and oil—what remains bottle up for applying to boots and shoes. If a polish is desired, make a thin paste of pulverized charcoal and spirits of turpentine. When the oiling preparation becomes dry, apply it, and follow with shoe blacking as usual.

#### Repairing and Painting Farming Implements, Wheel Carriages, etc.

Is equally important. It has been the practice of implement makers for twenty years passed to varnish their wares—a fashion introduced from Massachusetts. Varnish applied to wood is pleasing to the eye, but substituted for paint it is at a serious loss to the farmer, whose voice ought to be raised, decidedly against the practice. Varnish applied to a plow for example, exposed to alternate wet and hot

sun, will disappear before half the cultivating season expires. All implements exposed to the elements, ought to have two coats of paint. Better to pay a trifle extra than have it otherwise.

A good and durable paint is made thus:  $\frac{1}{2}$  gallon white lead, 1 pint lampblack, with sufficient linseed oil to form a mixture, to the consistency of cream. By adding more or less lampblack, you will have a paint light, or dark lead color, as preferred; add a gill of spirits of turpentine and a dessert spoon full of litharge, to act as dryers. I have said nothing concerning the importance of repairing and painting farm implements, tools, etc. The necessity of which will be apparent to every observing and industrious farmer.

PLOWMAN.

*For the Maryland Farmer.*

### ON THE FARM.

On the farm let such work as grubbing, composting manures, and getting out fence rails and mending fences be carried on as occasion or weather will admit. Be sure to make the fences plenty high and strong to turn all stock, and keep the fence row clear of briars and bushes. It will make the fence last a good deal longer. In getting out the fence rails don't waste the timber. You may think that you have a plenty to last your lifetime, but this is selfish and ungenerous. Your children will need it, and it takes a long time to grow a tree. The tree-tops and all logs that you can't split into rails should be cut up into firewood, and "hacked" up to season ready for summer. If you want to keep the cook in a bad humor, and get poor bread into the bargain, give her green wood to cook with. Green wood to cook with on a rainy day is enough to sour the temper of a saint. Haul out marl, and forest litter and mould, as the state of the fields will allow. The mould from hard wood forests the best. Lay off your years work, and keep a correct debit and credit account with your farm. Practice rotation and manuring, and try to improve the fertility and money value of your rural homes. Don't be satisfied with making a living merely, but try to advance a little, and lay up something for a rainy day.—Remember you are growing older, and you will not be able to work hard by and by. Be diligent and saving now, and thus provide for the evening of life.

B. W. JONES.

CARE FOR STOCK.—No farmer was ever made poor by providing comfortable quarters for his stock, even though he ran in debt to do it; but thousands has become poor by not attending to this important matter. An animal well housed in winter will thrive on much less food than one exposed to storm and driving winds.

## COTTON SEED MANURE---WHAT IT IS AND HOW USED.

A correspondent at Greensborough, North Carolina, propounds to us the following query :

"Will you please inform me through the columns of your valuable magazine the best time for applying cotton seed to corn?"

### REPLY.

There are some questions that answer themselves, and this, with all due respect to our correspondent, appears to be one of them. We are not practically conversant with the use of cotton seed as manure, although we know, from superabundant testimony to that effect, that it makes, when properly used, an excellent fertilizer. Cotton seed is peculiarly rich in bone earth—phosphate of lime, potash and soda. An analysis of  $36\frac{3}{8}$  grains of cotton seed ash gave the following results :

Silica.....	0.1000
Carbonic Acid.....	0.3504
Chlorine.....	0.3940
Sulphuric Acid.....	0.0980
Phosphoric Acid.....	11.3618
Lime.....	1.0784
Magnesia.....	6.0833
Potash.....	13.3566
Soda.....	3.1070

36,6000

It will be seen by the above that  $36\frac{3}{8}$  grains of the ash of cotton, or 1,000 grains of the pure seed before being reduced to an ash, gave 33 grains of phosphoric acid, potash, magnesia and soda. The seed is also rich in nitrogen. We have therefore, to say, in respect to the time of application that in our opinion it should be applied like every other manure rich in the elements of fertility. If the cotton seed manure is abundant, we should use it liberally broadcast and ploughed immediately under. If the supply is comparatively small, we should apply it to the corn in the hill, first dropping the cotton seed manure, and then covering it lightly by drawing a little earth over it with the foot, and on this earth deposit the seed corn and cover up. But in no case should cotton seed be used until its vitality has been destroyed by fermentation.—[Eds.

Farmer.

### Crushed Cotton Seed as a Fertilizer.

A correspondent from Newman, Ga., writing to the *Southern Cultivator* gives his experience in the use of crushed cotton seed, as a fertilizer for cotton and corn :

"I desire to direct the attention of your numerous subscribers to the vast benefits derived from crushed cotton seed as a fertilizer. My plan for crushing was to pass the seed through my syrup mill. I prepared ten bushels in this way as an experiment ;

after which, having packed them away in one bushel of lime, (sprinkled lightly through them,) selected four acres of land. On one of these, I used five bushels of crushed seed under cotton, drilled in before bedding. I also prepared another acre with uncrushed seed, drilled likewise. I gathered from the acre manured with crushed seed 1400 lbs. seed cotton—on that manured with uncrushed seed, 1000. I also prepared two acres of similar lands for corn—on one of these I placed crushed seed near the corn at time of planting ; the other uncrushed seed. I realized 30 bushels from the crushed, and 19 from the uncrushed, and I am fully satisfied that the planter would be amply paid for his trouble in crushing the seed."

An other correspondent at Warrenton, Georgia, writes the same paper as follows : 'Cotton seed is undoubtedly an excellent fertilizer for all crops grown in the South, but is best suited to corn and wheat. At least one half of this vast quantity of fertilizing matter is actually destroyed by the system almost universally adopted in preparing and applying it. The application is usually made in two ways—on top of the ground, and the seed allowed to come up through the cotton seed, and the other in the ground with the seed they are intended to manure ; but their preparation is substantially the same—thrown out as ginned, in pens or large piles, to rot from 3 to 6 months, and thus lose half of their fertilizing properties.

I don't believe there will be any question among planters, that from  $\frac{1}{4}$  to  $\frac{1}{2}$  pound of cotton seed to a hill of corn will double its yield on two-thirds of the land in this country applied in the ordinary way. Then just think of the vast number of bushels of corn lost to the Southern planter, if all the fertilizing properties of cotton seed could be retained and applied to corn alone, to say nothing of other crops.

Can this not be done in a very simple way, by placing two iron or hard wood rollers immediately under the breast of the gin, so as to let the seed fall between the rollers, which should be turned by a band attached to gin, and then pack them away in a house, or room attached to gin house, till wanted for manure ? \* \* \* \*

Just as sure as I live to make this crop, I shall crush all my manuring seed."

PLANT EARLY VARIETIES OF CORN.—In view of the almost certain scarcity of corn next season, says the *Memphis Practical Planter*, we advise our friends to devote a few acres of land to some good early variety of corn, sufficient to make bread until the regular crop comes in. We advise the planting of *Adams' Early*. It will be hard enough to grind a month or six weeks sooner than the main crop.



## AGRICULTURAL CHEMISTRY.---VI.

BY J. S. H. BARTLETT, M. D.

OF THE PROPERTIES OF THE DIFFERENT EARTHS AND  
THEIR RELATION TO VEGETATION.

The several earths contained in the soils before treated of do not possess the same properties, and are differently affected by the great agents of vegetation, air, heat and water, and, as we have before seen, the excellence of a soil depends upon its containing the right proportion of each kind of earth, of which it is necessary to know the particular properties. Siliceous earth, silica, or sand, exists in all the primitive rocks. In order chemically to obtain silica in its greatest degree of purity, it has been recommended to fuse it with six parts of potash, it is then to be dissolved in water, and separated from the alkali by muriatic acid, the solution to be evaporated to dryness, and the residuum being washed in water affords pure silica. This body is an acid, at an ordinary temperature it is inactive, but at a white heat this acid is exceedingly active, combining with bases and displacing most other acids. Silicates, that is, salts containing silicic acid with two or three times their weight of potash, or soda, are soluble silicates, and have been recommended as manure for the cereals, which always contain a large amount of silica acid in their stems and husks. The stores of potash, soda and lime, which supply plants with saline matters, are often in the form of silicates; these are slowly decomposed under the influence of the carbonic acid of the air, or from decaying vegetable matter which render them soluble. The glassy coating of the outside of the straw of the different grains and grasses, as also of the stalks of Indian corn, is formed of this acid combined with potash or soda, as the soil may afford. This substance serves the same purpose for plants that bone does for animals, viz., to enable them to support their own weight, and to maintain the upright position, and when it is not afforded by the soil in sufficient quantities in a soluble state to meet the wants of rapid vegetation, the plant falls to the ground, as it is technically termed "lodges," thereby impairing the value of the crop, as well as increasing the labors of the husbandman in securing it. On some of the shores on our coast, where the land is sometimes almost a blowing sand, the oily and very bony fish "menhaden" is used as a manure, and it is found to be the only one by which a crop can be raised on a soil where silica so greatly predominates. The farmer knows this, but generally is unable to account for so palpable a fact.

It may not be uninteresting to observe how agricultural chemistry can aid him in the way of explaining it.

In the case in question, the soil is mere sand, destitute of animal or vegetable matter necessary to afford by their decomposition ammonia or carbon, the principle and element of growth, and entirely devoid of soluble silicates, as well as the phosphates, found more or less in all soils capable of producing grain.

Immediately after the fish is buried under the soil, decomposition takes place, carbonic acid and water are given off supplying two of the elements of growth; nitrogen also, a production of animal decomposition, is evolved, which, combining with the hydrogen and moisture absorbed from the atmosphere and existing in the soil, produces ammonia, the principle of growth and the great stimulant of vegetation. The oil is extracted by the heat and permeates the soil in every direction, absorbs oxygen, and gives off carbonic acid rapidly, which affords carbon for the growth, as well as renders soluble the silica for stamina or support. The bones which are fine, as well as numerous, begin to decay, and readily afford the phosphate necessary for the formation of grain; and at the end of the season we find the full and perfect plant. The objections to a soil in which sand predominates, are the small amount of water which it absorbs, and the facility with which it permits it to escape both by percolation and evaporation.

## ALUMINA

is the next earth that comes under consideration, it is contained in all the compound primitive rocks, and is the pure base of clay; it possesses great affinity for water which it absorbs with much avidity, not being saturated with less than 25 of its own weight, and retains it very forcibly, especially when that which softened its surface is evaporated, yielding it entirely, only at a temperature sufficiently high to produce fusion. According to Berzelius, alumina consists of 46.70 of oxygen and 53.30 of aluminum its metallic base.

Alumina saturated with water forms a soft paste, smooth to the touch, easily molded, and receiving without difficulty any form which one may wish to give it. The hydrated silicate of alumina forms the bulk of clay, which is hardened by fire, and undergoes by the action of it a change which destroys its solubility in water; on this fact depends one of the most useful manufactures known, that of bricks.

Among the objections to a soil in which clay exists in excess, is that it is very plastic, adhesive, difficult to work, and retains water near the surface, which is only got rid of by evaporation, which renders the soil cold and retards vegetation.

## LIME.

We will conclude the subject of the properties of the different earths by considering that known as lime, which, from its great chemical activity, is



never found alone in nature, but always exists in combination, chiefly with carbonic acid as limestone, chalk, marl, or calcareous minerals. It is also combined with sulphuric acid (gypsum), phosphoric acid (bone earth) and silicic acid. The base quick lime is separated from the carbonate by a white heat, is white, caustic and sparingly soluble in water, less so in boiling water than in cold. The solution is powerfully alkaline, changing the vegetable colors, and with an acrid taste.

After quick-lime has been slacked with water, it is termed hydrate of lime, and in its pulverulent state is spread on the land, on which it produces various effects, which may be treated of on some future occasion. By a further admixture of water, it forms a paste which is the base of mortars used for building purposes. If quick lime be exposed to the air so as to become air-slacked, it absorbs water and carbonic acid to the extent of upwards of 30 per cent.; about one half becoming carbonate or mild lime, and the rest hydrate. Both the hydrate and air-slacked lime continue to absorb carbonic acid from the air, and finally both become mild. Lime being an active base, combines readily with nearly every acid, forming a great number of salts. Limestone formations appear from the earliest transition epoch, in which they constitute hard crystalline marbles, through the second and into the tertiary period. They frequently form the richest lands when disintegrated in consequence of the large amount of corals and organic remains they contain, which often yield 2 per cent. of bone earth.

Some of the finest wheat soils are of this kind when they contain a due admixture of clay in their composition. The disadvantage resulting from an excess of lime in the soil would be a want of sufficient retention of moisture, the vegetable matters applied would be speedily exhausted, and the ammonia of the manure used would soon be dissipated by being converted into a carbonate, the most volatile form of that salt. Such a soil might be termed hungry, and could only be with difficulty maintained in a condition fit to properly support vegetation.

In conclusion, it is evident that a soil to be considered fertile, must contain the three earths, sand, clay and lime, in such proportions that the disadvantages of each one may be overcome by the counteracting properties of the others.

*Journal of Applied Chemistry.*

**TAKE CARE OF THE RUBBISH.**—The *Michigan Farmer* says it knows of an English gardener who would never allow any rubbish to be burnt, but had it thrown into heaps to rot. It is astonishing, if left to time, how quickly that agent will perform the work of decaying trash.

Subscribe to the *Maryland Farmer* for 1871.

### Why the Best of Seed Sometimes Fail to Give Satisfaction.

Good seeds will fail to germinate if they are planted too shallow or too deep, or in soil that is too wet, too dry or too cold. Many plants will usually present but a dwarf and sickly appearance from which they may never fully rally, should they appear above ground before the season is sufficiently advanced to give them the warmth they require. Of those that are liable to rot in the ground if planted before the soil has become warm, are Beans of all sorts, excepting the English varieties, Corn, Cucumbers, Egg Plant, Melons, Peppers, Pumpkins, and Squashes. As a rule, all large seed require deeper planting than small seed. As a general rule, the wetter the soil the shallower all varieties should be planted, the principle being to put all seed just far enough below the surface to get moisture enough to swell them, while they should be kept as near the surface as is consistent with this end, that they may receive as much heat from the sun as possible to cause them to germinate. Another source of ill success with good seed comes from not properly preparing the bed. If the seed bed is not raked level when planted with a seed sower, some of the seed, even with the utmost care, will be likely to be too deep, and other lots not deep enough. If the soil has not been made very fine with repeated rakings, the earth will lie in coarse, hard lumps over the small seed, rendering it impossible for them to force their way up. It is sometimes difficult to get small seed to vegetate when planted late, owing to the excessive dryness of the surface of the earth. Again, some varieties, when very young, carrots for example, are very apt to be burnt up by the heat, should it be excessive, even after they have germinated well and made a good show above the surface.—*James J. H. Gregory, Marblehead, Mass.*

### Signs of Rainfall.

Mr. Robert Scott, an English meteorologist, asserts that, when the clouds lie low on the hills, it is a sign of rain; as this indicates that the air is saturated with moisture. Very bright, clear weather, making the hills appear clearly visible, is, he says, also an indication of approaching rainfall; for, when the air is dry, it holds in suspension dust, which makes the distant landscape hazy. As vapor condenses, it first attaches itself to the particles of dust, and by making them heavier, precipitates them to the earth. A fine starlight night, in otherwise rainy weather, is a sign that it will probably commence raining again the next morning.

It is estimated that there are four million more hogs in the United States this year than last.

From the Marlboro Gazette.

## THE INGREDIENTS OF THE ASH OF ALL AGRICULTURAL PLANTS.

The ashes of nearly all agricultural plants have been frequently analyzed by different chemists; but, perhaps, more thoroughly in Germany than in any other country. And the following substances are found to be invariably present in plants, and nearly in all parts of them, viz :

BASES.	{ Potash,	ACIDS.	{ Chloride,
	{ Soda,		{ Sulph. acid,
	{ Lime,		{ Phos. acid,
	{ Magnesia,		{ Silicic acid,
	{ Oxide of iron.		{ Carb. acid.

It is true that the quantities of these different constituent parts of the ashes have varied much in the analyses made by different men, and under various circumstances; but the prominent fact remains that they have all been found to be present where the proper tests have been applied.

Potash, Lime, Magnesia, Phosphoric acid and sulphuric acid, are now deemed *absolutely necessary* to the life of agricultural plants, as has been demonstrated by various experiments; but in none, in a more satisfactory manner, than by what is termed *water culture*. This consists in causing a number of seeds of the plant, it is desired to experiment upon to germinate in moist cotton or coarse sand, and when the roots have become an inch or two in length, select the strongest seedling and support them so that the roots shall be immersed in water, while the seeds themselves shall be just above the surface of the liquid.

For this purpose, in case of a single plant, Indian corn for example, a wide mouthed glass jar, such as are used for preserving fruit, for instance, and holding about one quart, will answer. A large piece of cork, to fit the mouth of the jar is then cut with a vertical notch, extending from the edge to the centre, and the stem of the seedling, packed with cotton is fixed in the inner extremity of the notch. The cork thus serves as a support of the plant. The jar is then filled with pure water to such a height that the seed shall be a little above the liquid. Thus arranged, in a moist atmosphere, suitable warmth, ventilation and illumination alone are requisite to continue the growth until the nutriment of the seed is about exhausted. As regards illumination, this should be as full as possible for the foliage, but the roots should be protected from it by enclosing the jar in a shield of black paper. When the first green leaf appears, the pure distilled water is replaced by the solution whose nutritive power is to be tested.

The temperature should be properly proportioned to the light, as observed in the skillful management of conservatory plants. By this process large and

well developed plants have been produced by the aid of appropriate liquid, containing in proper proportions all that the plants require, save what it can derive from the atmosphere.

In a manner similar to that described, Prof. Wolff grew four plants of oats to that maturity, having 46 stems and 1535 well developed seeds. And Prof. Nobbe obtained buck-wheat plants six feet high and bearing three hundred plump and perfect seeds.

But it may be asked, who are Professors Wolff and Nobbe? They are European chemists, of well known and established characters, in high scientific positions, and whose words, on matters of this kind, will not be questioned for a moment by those who know their eminence in the profession of agricultural chemistry, to which they have devoted many years of practical labor. What, then, is the inference to be drawn from these facts? Is it not that the agriculturist must supply the deficiency wherever his soil has been deprived of any of those ingredients which are necessary to the life of the plant? And can it be doubted that the wasteful system of farming which has characterized the cultivation of the soil in Maryland and Virginia, has been gradually exhausting the potash which is generally abundant in newly cleared lands? Other constituents have been brought from a distance and amendments made in the soil by the use of Plaster of Paris, phosphates, limestone and marls; but until recently but little has been done to restore the *very large quantities* of potash which have been yearly carried off the plantations, without corresponding returns.

It is time, therefore, that the owners of land in your vicinity should be awakened to see the importance of this subject, and I hope you will call their attention to the matter in some of your brief editorials, as their attention is but seldom given to communications which have no editorial notice. I believe there is no intelligent chemist of the present day, who doubts the importance of potash as an ingredient of a good fertilizer; and there are few practical farmers who will not admit the virtue of ashes.

But what is the ingredient of ashes which has been so productive when with lime and organic matter on the land? It is unquestionably the potash; the alkali, which serves to neutralize the excess of acids which combines with the vegetable acids in the plant itself, and which aids in the digestion, as it were, of the plant food, which is found in other parts of the soil and in the manures which are used with it. Respectfully yours, A. H.

Maryland Agricultural Coll.ge.

Soft days in winter cause cows to increase in their milk. To profit by this fact, keep the stable always warm,



*For the Maryland Farmer.*

### Advantages of Cooked Food for Stock---Prindle's Boiler and Steamer---25 to 40 per cent. Saved.

The great advantages arising from cooking all kinds of food for stock is becoming a fixed fact, and among our Eastern dairymen and others it has been fully demonstrated that from 25 to 40 per cent. of food is saved when cooked in Prindle's steamer. There are other advantages besides the mere fact of economy, consisting of haste in fattening, stock in better condition, better health, manure without weeds or seeds to foul the ground when seeded; (labor and money saved thereby.) Better crops, easier cultivated; use of the steamer for manufacturing purposes; making soups; scalding hogs; cooking for large families, heating water, and hundreds of cases in various factories where steam power is used. It requires no engineer, can be managed by any ordinary person; is secure from explosion by improved safety valve, and when practically considered it has more advantages than any other low priced invention can afford. Combined with all these advantages, it is so low in cost that it would save the original cost in a single year where there is much use for it.

The Philadelphia Press, of November 10th, 1868, says that at the banquet to the Boys in Blue in that city, 27,000 meals were furnished and nearly all cooked by Prindle's steamers in two days. Cooking by steam does not burn the food like the old cauldron boiler, and restores the flavor of grain, hay or straw slightly tainted.

### \$63,000,000 Wasted Annually.

By an examination of the Annual Report of the U. S. Department of Agriculture for 1869, lately published, we find (p. 35) that the total value of grain, Indian corn and hay raised in 1869 amounted to 1,491,412,100 bushels, and estimating 40 bushels of grain to one ton of hay or straw, we have 37,285,302 tons, and as the U. S. standard of losses 33 per cent., an annual loss made to the farmers and producers of \$63,088 35, for 1869. The total value of these productions was \$1,439,546,788 for the same year. This saving annually, (if it could be controlled) would pay half the annual interest on the U. S. debt, or it would pay off the national debt in 35 years.

Let each individual take up this subject for himself, and figure upon the annual saving that could be effected by the use of the steaming process. At the New York State Fair in 1870, Mr. Prindle cooked a full bushel of feed in 23 minutes, and it was properly done. This tells the capacity and also the labor saved over the old method, where a constant watch and stirring must be kept up to prevent burning,

Experiments made by C. M. Clay, of Kentucky, showed that one bushel of dry corn made 5 lbs. 10 oz. of pork, of boiled corn, 14 lbs 7 oz.; and boiled meal 16 to 18 lbs.

S. H. Clay, of Kentucky, found that a bushel of new corn makes 5½ lbs of pork, whilst a bushel of cooked meal gained 22 lbs. Mr. Crozer, of Northport, L. I., says that he saved fully 40 per cent., and keeps all his blooded stock of horses, cattle, sheep and hogs, in better condition, and that the cows give 20 per cent. more milk than on uncooked food. Try it. D.

COOKING FOR HOGS.—The *Practical Farmer* says; W. H. Brosius, of Lancaster county, Pa., last fall used a Prindle steamer for cooking food for his hogs. He fed corn-meal, mixing it with water when cold, and then steaming it. Twenty-seven hogs were put to feed September 15, 1869. They then weighed 4449 pounds. On October 12, 27 days thereafter, they were found to have gained 1525 pounds. There had been used 99 bushels and 38 pounds of corn-meal. Calling this 100 pounds, it will be seen that there was a gain of 15½ pounds live weight, for each bushel of meal. It will also be noticed that the average gain per hog per day was a little over two pounds—about two and one-eleventh.

### Leather Bits for Horses in Winter.

The fact that iron bits freeze in Winter all the moisture they come in contact with cannot be denied; and the painful fact that many a faithful animal has its mouth frozen in consequence is patent to all residents of our Northern cities. When subjected to a certain low temperature, iron freezes much more quickly than ice. Thus, a horse in Winter weather, in all cold climates, has his mouth frozen by contact with the cold iron once or twice, sometimes frequently during the same day, each time causing the freezings to go deeper and deeper, to result in the end in extensive ulceration. With a mouth made sore from this cause, the poor horse refuses to eat, and gradually fails.

We have known instances to occur in this way when the veterinary doctor had to be summoned, and the horse's complaint treated as bots, glanders, horse ail, etc., the poor animal meanwhile being literally drugged to death with drenches and boluses as large as pigeons' eggs. Fortunately for the poor brute, his sufferings terminate very soon, and he is carted off to horse heaven, or some other such paradise place where good horses go. Many a valuable animal has been lost in this way, and the verdict of the sapient jury impaneled to sit upon his equine carcass is generally that he came to his death through one or another of the above causes.

By using leather or gutta percha bits this trouble may be readily avoided. These bits are so constructed that the metal substances cannot touch the flesh. They are durable, and cost only about fifty cents each.—*Turf, Field and Farm.*



## SCIENTIFIC.

## Virtues of Borax.

It may not be generally known how very valuable borax is in various purposes of household use. We find it the very best cockroach exterminator yet discovered. One half-pound, costing but fifty cents, has completely cleared a large house formerly swarming with them, so that the appearance of one in a month is quite a novelty. The various exterminating powders puffed and advertised have been found not fully effective, tending rather to make the roaches crazy than to kill them. There is something peculiar, either in the smell or touch of borax, which is certain death to them. They will flee in terror from it, and never appear again where it has once been placed. It is also a great advantage that borax is perfectly harmless to human beings; hence no danger from poisoning. It is also valuable for laundry purposes. The washerwomen of Holland and Belgium, so proverbially clean, and who get their linen so beautifully white, use refined borax as washing-powder instead of soda, in the proportion of a large handfull of borax to ten gallons of water. They save soap nearly one half. All the large washing establishments adopt the same mode. For laces, cambrics, etc., an extra quantity of the powder is used; and for crinolines (requiring to be made stiff) a stronger solution is necessary. Borax, being a neutral salt, does not in the slightest degree injure the texture of linen. Its effect is to soften the hardest water, and therefore it should be kept on the toilet-table. As a way of cleaning the hair, nothing is better than a solution of borax in water. It leaves the scalp in a most healthy condition, and the hair is just sufficiently stiffened to retain its place. This stiffness, however, can be readily removed, if objectionable, by washing with water. Borax is also an excellent dentifrice; dissolved in water, it is one of the best tooth-washes. In hot countries it is used, in combination with tartaric acid and bicarbonate of soda, as a cooling beverage.—*Manufacturer and Builder.*

## Weights, Measures, and Packages.

A barrel of flour weighs 196 pounds, a barrel of pork 200 pounds, a barrel of rice 300 pounds, a keg of powder 25 pounds, a firkin of butter 56 pounds, a tub of butter 84 pounds. The following are sold by weight per bushel: Wheat, beans, and cloverseed, 69 pounds; rye and flaxseed, 55 pounds; buckwheat, 52 pounds; barley 48 pounds; coarse salt 85 pounds. Cheese comes in sizes ranging in weight from 40 to 100 pounds. The "Nutmeg" variety of the English dairy cheese averages from 9 to 14 pounds. The pine apple cheese weighs 5½ pounds each. The "Young America" weighs 6 pounds.

## Velocity of Insect's Wings during Flight.

M. E. Marey has made some curious investigations in this connection which will undoubtedly interest those who are studying the subject of human flying. To ascertain their velocity he adopted the following plan: The insect was grasped at the back by a pair of fine nippers, and, when it sought to fly, one of its wings was directed in such a way that it rubbed its point against the surface of a smoked cylinder which revolved with a known velocity. The wing at each of these revolutions carried away a little of the black smoke which covered the cylinder, and left a trace of its passage. The result of the experiments, allowing, in regard to their accuracy, for a variety of distracting causes, was to show the following number of beats per second for the wings of each insect: The common fly, 330; the drone 240; the bee, 190; the wasp, 110; the hawk-moth, 72; the dragon-fly, 28; and the cabbage-butterfly, which is inaudible, 9 beats per second. By other variations of the experiments he arrived at similar results.

## Mending Water Pipes.

A British scientific publication gives the following letter: "Many of your readers have doubtless had more or less trouble, at some period of their lives, in repairing water-pipes where the water could not be shut off conveniently at the fountain head or some intermediate point. In going to my office, a few days since, my way led past a place where a man was repairing a lead pipe, which had been cut off accidentally in making an excavation. There was a pressure of water of more than fifty feet head. His plan seemed to me to be novel and ingenious. The two ends of the pipe were plugged, and then a small pile of broken ice and salt was placed around them; in five minutes the water in the pipe was frozen, the plugs removed, a short piece of pipe inserted and perfectly soldered, and in five minutes the ice in the pipe was thawed and the water flowing freely through."

## Thickness of the Earth's Crust.

To enable the earth to resist the tide-generating force of the sun and moon, so as to leave the phenomena as they are actually found, Professor Thompson considers that its crust must have a thickness not less than two thousand or two thousand five hundred miles. Such a conclusion is of course quite inconsistent with the hypothesis that the earth is a mass of molten matter inclosed by a thin, solid shell.

LINEN can be glazed by adding a teaspoonful of salt and one of finely scraped white soap into a pint of starch,

## The Dairy.

### MARKING AND PACKING BUTTER.

The *American Agriculturist* last year, published a prize essay on butter-making, presented by Mrs. M. A. Deane, of Farina, Illinois. It presents the leading points in good butter making in plain language, but contains nothing that will be new to our readers, and lacks a good deal of exhausting the subject. Nevertheless, since we have so many poor butter makers, and the suggestions of a prize essay may have more value to some than suggestions contained in an unpretending paragraph, we give the substance of Mrs. Deane's essay:

Milk should be cooled to 60° as soon as possible after milking. None but tin pails should be used to milk in. The milk when cooled should be set in deep tin pails, and kept at a temperature of 60°. This will secure all the cream. But if the milk is not cooled immediately after milking and kept cool, much cream will be wasted, let it be set in what way it may—in deep or shallow dishes.

It will be seen at once that a cool dairy room for summer, that can be kept warm in cold weather, is essential. It must be dry, free from odors of all kinds, even from the kitchen, and kept scrupulously clean. Without exposure of currents of air, there must be free circulation of air. Though ventilation is essential, milk things must be well washed and rinsed, and then scalded in boiling water. Hot water will not answer the purpose—it must be a temperature of 212°.

The cream should be skimmed off just before the milk thickens. The cream is then bright and yellow, and is taken off easily. This will necessitate skimming at least twice a day. The night's milk and the morning's milk will seldom be fit to skim at the same time. But the night's milk may all be skimmed at once, and the morning's milk at another time, all at once. To determine the proper time to skim, requires experience and judgment.

The cream should be kept at a temperature of 60°, and well stirred as often as new cream is added. The cream should have a clean sour taste, when churned, but it must not be kept too long. Sweet cream must not be mixed with it just before churning, as it will waste by not getting sufficiently churned, sweet cream requiring more churning than sour cream does. The temperature of the cream when the churning begins should be 62° or 63°.—Then it will rise to about 68° by the time the butter comes, which is a good temperature for working. It is an advantage to throw a little salt into the cream before beginning to churn, if the cows have not been well salted. The best way is to salt the cows. A thermometer should be used to determine the temperature. If the butter is to be colored, it should be done by putting carrot juice or a preparation of annatto in the cream.

The buttermilk should be nearly all worked out and the butter well washed before the salt is added. Only salt enough to remove the insipidity should be used. None but the purest salt should be put into the butter. Mrs. Deane thinks washing may hurt the flavor some, but expresses the opinion that the loss is more than compensated by getting rid of the

buttermilk. After standing a short time the butter should be worked enough "to remove nearly all the water." There should be salt enough to make brine of what water is left. The next day, the butter should be worked and packed. It should on no account be allowed to stand longer than one day, as it turns rancid, while in this condition, very fast.

The difficulty lies in knowing just how much and how little to work butter. Mrs. Deane offers a few suggestions:

1st. The butter should not be too warm when worked, nor should it be so cold as to make working difficult. Immerse the ladle for a few minutes in boiling water, and cool perfectly in cold water; then, if the butter in the bowl is warm enough to admit of putting the ladle through the whole mass without difficulty, and dividing it up without crumbling, and still hard enough to cut clean and smooth, not the smallest particle adhering to the ladle, it is in the right condition to work.

2d. It should be worked with careful and gentle, yet telling pressure, and not by a series of indiscriminate stirrings and mashings and grindings against the sides of the bowl. The butter is composed of minute globules, which are crushed by this careless handling, thus rendering the butter greasy and sticky, whereas it should retain its clean, solid individuality, up to the time of packing, always working clear from the bowl and never sticking in the least to the ladle.

3d. The butter should not be worked until it is perfectly dry. When ready to pack, it should have a slight moisture about it, a sort of insensible remains of the clear brine which has been working off, and at the last, enough, so that when a trier is thrust into it, a drop or two of brine will ooze out around it and the trier itself be slightly wet, as if by a light dew. Over-working destroys all the beautiful consistency of the butter; makes it dry and sticky; greasy in summer, and tallow in winter; gives it a dull appearance, and a tendency to become rancid.

Butter should be packed perfectly solid, leaving no space for air. The tub should be completely filled, and covered air-tight before it is headed up.—Those who send fancy butter to market, put it up in balls or other styles to suit their customers. Pails are used for the purpose. If a trade-mark is stamped on the butter, no poor butter should ever receive the mark.

RECIPE FOR MAKING SUPER-PHOSPHATE.—Plaster and puddle a floor of clay, and let it dry. Lay thereon a ton of bone-dust—say 7 or 8 qr.; it should not be coarse, but need not be literally dust; if boiled or burned, so much the more favorable for the efficiency of the after operations. Pour water on the heap for a day or two, as long as any is absorbed; then flatten it down, and lay a lot of ashes around the edge. Pour on gradually 6 or 7 cwt. of sulphuric acid—four or five of the ordinary carboys. It should be poured into jugs, and thrown from the jugs on to the bones. The slowness of this plan, as well as its safety, is a recommendation. It will boil, and fume, and effervesce, and you had better stand to windward of it. Before night it will be quiet, and if still very wet, it should have the ashes closely packed around it. They may be mixed with the heap in a day or two, and it will be fit for the drill in a fortnight.



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Tappahannock Wheat.

There is a marked unanimity among experimenters in the Southern States in favor of the Tappahannock, says the *Agricultural Report*, as being well adapted to the climate and soil of that section. In Maryland it ripens early, thereby avoiding danger from the weevil, which in some seasons makes sad havoc with the more slowly maturing varieties. A Harford County farmer reports a yield of thirty-two bushels to the acre, weighing sixty-two and a half pounds per bushel. In several counties of Virginia where this wheat has been fairly tested, it is supplanting other varieties. The seed distributed in Shenandoah County ripened ten days in advance of any other variety, and yielded abundantly.

SALTS OF POTASH.

A correspondent at Darnestown, Montgomery County, Md., writes us as follows, to which we subjoin the answer of our correspondent, "A. H.":

*Dear Sirs:*—Will you mention in the February number where mineral salts of Potash can be obtained, and at what price, and in what condition and quantity? Your correspondent "A. H.," page 14, of January number, says 100 lbs. Potash in solution added to one ton bone, will be found immediately productive of good results. What quantity of water would you recommend as sufficient to incorporate the Potash thoroughly with one ton of dry bone; in mixing ashes with dry bone, and adding water previous to mixing the ashes? I have frequently added eight gallons water with five bushels bone, and readily taken up by the bone. I have succeeded well in preparing fine in bulk in batches of five bushels bone to eight or ten gallons water, and adding five bushels ashes after being thoroughly mixed and thrown up in bulk. Each day's work covered with plaster  $\frac{1}{2}$  in. thick, and the whole remain in bulk till our planting; then broken down and thoroughly mixed, applied broadcast on one harrowing. Corn, wheat, and grass greatly benefitted.

MARYLAND AGRICULTURAL COLLEGE, }  
January 20th, 1871. }

To the Editors of the Maryland Farmer:

In reply to the inquiries of your correspondent at Darnestown, Montgomery County, Md., of the 13th instant, I would state that there are two Salts of Potash, imported from Stafford, Prussia. One the Sulphate, and the other the Muriate. Both are valuable as fertilizers; but I should prefer the Muriate, containing about 80 per cent. of Potash.

They are both *Soluble* in water, and the amount of water used should be sufficient to convert all the solid salts into the liquid state. Any excess over this would not be material, provided it was not sufficient to cause it to waste, or run off from the bone dust.

Charles L. Oudesluzs, No. 57 Gay street, Baltimore, has advertised these Salts for sale. And some of them at \$2 50 per cwt.

The solution of the Salts should be well incorporated with the bone dust as uniformly as possible, so as to give the best effect to the chemical action; and the compound should be kept out of the weather until the season for distribution and incorporation with the soil intended to be benefitted by its use.

Respectfully,

A. H.

[We would suggest that those interested send to Charles L. Oudesluzs, Baltimore, for a copy of his treatise on the "Application of Potash and Magne-

sia Salts, their effect, and necessity for Farm-yard Manure." He has a stock of German Salts always on hand. We would also suggest that he advertise in the *Maryland Farmer*, for the benefit of our readers, as well as to save us much time in answering letters. The Muriate Potash is sold for about 3 cents a pound—the Caustic Potash from 8 to 9½ cents.—*Editors Farmer.*

### REPORT ON GRAIN DRILLS.

The committee appointed to conduct a Trial of Agricultural Machines and Implements, under the auspices of the New York State Agricultural Society, which took place at Utica on the 12th of September, 1870, last, met as appointed, and proceeded to the performance of their duties. The committee first took up the examination and trial of Grain Drills.

Of seven entries under this head, there appeared on the ground four, viz :

Wilson & Murphy, East Bloomfield, N. Y.; Seymour's patent; with or without grass-seeder; weight 550 pounds; sows 6 feet wide; price \$90; with seeder, \$100.

Bickford & Huffman, Macedon, N. Y.; "The Farmers' Favorite;" weight 554 pounds; width 6 feet 2 inch; price \$80.

Bristol & Robbins, Oswego, N. Y.; grain drill; weight 500 pounds; width 7 feet; price \$80.

Brown, Adams & Co., Shortsville, N. Y.; "The Empire Drill," with grass seeder and land measurer; weight 550 pounds; width 7 feet; price \$85.

The ground selected for the trial of grain drills was a piece on which oats had been grown the present year. A portion of it was ploughed and harrowed on the day of trial, but being very dry, it remained lumpy and rough—not in a favorable condition for the working of the drills. The machines were all tried with wheat—as nearly as practicable with the same quantity per acre—and the different points in reference to their operation carefully observed. They were then taken to a smooth, hard road, and tried with oats and with Indian corn—the object in the latter cases being to ascertain the ability of the machines for sowing different articles, and the comparative regularity and evenness of the distribution of the grain.

After making as thorough tests as circumstances would admit of in regard to the operation of the machines, and giving due consideration to the advantages afforded by their peculiarities of construction, and also to the character of the workmanship and finish of each in respect to durability, as compared with the price, the committee decided, without further consultation or comparison of notes, to submit the question of superiority to a ballot, when five of the six members voted for the drill of Bickford & Huffman, and the award of the Bronze Medal was thereupon made to them.

### DETERIORATION OF WHEAT.

An intelligent writer in the *Mark Lane Express*, London, says, touching this subject :

"So thoroughly illogical an article as is published in the *Prairie Farmer*, headed 'Why Wheat Deteriorates,' has rarely been seen in the columns of an agricultural paper; and we shall not do our practical readers the injustice of assuming that they need any help from us to discover the numerous fallacies it contains. Unfortunately, the article is read by many who are raw to their business, and therefore incapable of detecting any errors that would be palpable enough to an expert. In his heading, 'Why Wheat Deteriorates,' the author of the article has begged the question. He has started on the assumption that wheat *does* deteriorate, and directly proceeds still farther to assume that it has done so when the yield has declined from forty or fifty bushels per acre to ten bushels. Thus the writer has assumed that a small yield is evidence of a deterioration of the constitution of the wheat plant.—There we meet him with a challenge to prove that any such deterioration has ever been known to exist. Until the writer has found a few wheat plants that have nearly lost the distinctive characteristics of wheat, and that exhibit unmistakable signs of returning to the wild state, let him not talk of deterioration. Wheat produced at the rate of six bushels per acre is likely to be even healthier and better seed than that which formed part of a crop of fifty bushels per acre. A dense wheat crop is not necessarily healthier than a thin one, but is, on the contrary, more likely to take the rust. Neither is the produce of a crop grown on rich land so well adapted for seed as that grown on land in fair, healthy condition. The old farmers of England never take seed from rich land to poor, but *vice versa*. The amount of yield per acre is sure to be less when seed grown on rich land is sown, and as surely an opposite result is obtained from an opposite course of practice. The fault in America is not in the seed, but in the practice, common also in this country, of exhausting the land by repeated cropping without returning any of the fertilizing elements which the crops take away. The seed is right, but the farming wrong. In saying this, we do not mean to allege that all soil is capable of producing a healthy wheat plant, because experience has proved that some soils require an occasional change of seed, and none demand it more imperatively than those black soils that are so highly esteemed by the farmers of this country. In effecting any such changes it is desirable to bear in mind the British maxim,—'Get your seed from poorer land than your own.'"

He that knows himself best, esteems himself least,



*For the Maryland Farmer.*

## COTTON CULTURE.

Though your journal is published outside the domain of "King Cotton," yet as its circulation in that region is considerable, and the fertilizers advertised therein are used almost, if not quite, as extensively as your journal circulates, something on cotton, its culture, and fertilizers best adapted to its growth and yield, may be acceptable in your table of contents.

Not being a great advocate of its exclusive cultivation—never having been a favorite crop with the writer, some things which may be said may not be in accordance with the old established customs and habits of many in cotton sections.

But this is decidedly a progressive age, and the cotton planter must advance, or soon be left in the background, and be distanced by the wide awake agriculturist.

It does not now take seven to eight months, as it formerly did, to make and mature a cotton crop, though it still takes, owing to worthless labor and the nature of the plant, the whole year to prepare for, make, save, and get ready for, and to market. This being admitted, and we presume no one will deny the assertion, for facts prove it, the question arises, do the same plans succeed as well with the short as the long term of maturity. I answer no, and shall state some things to control under the present regime, which doubtless will be dissented from by those who have been raising the staple much longer than this deponent under the old plan.

With the great amount of fertilizers used, it has become too much of a hot bed operation, a forcing process, and, hence, to some extent, an injurious one. Cotton will prove most successful when given all the time from the leaving of frost in the spring to its return in the fall in which to mature. How is this to be done most successfully in this day of fertilizers? I answer, by thorough preparation and a more judicious use of fertilizers than many have practiced the last season. If you will raise cotton to the exclusion of almost everything else, thoroughly prepare (no dodging that, if you would insure greatest success, and, if done at all, it must be before planting,) a part of your land, and plant tolerably early, your thinnest soil, with a good dose of the stimulant. Be sure to plant *close* and leave *thick* enough to completely shade the ground by the middle of July. The more perfect the preparation, and more complete the shading by this time, the greater the protection against the drought, almost sure to come between this date and the 20th of August. Then prepare and plant your better lands, applying more fertilizer the later you plant, to insure its maturing in time, finishing in May. Early

planted cotton, heavily fertilized, cannot stand excessive wet, dry or hot weather, and if subject to either, will almost certainly lose everything but the bolls which may then be on the weed. If, therefore, you can secure a fair crop of bolls on your *numerous* stalks in your *thin* land before being subject to either of those extremes, that part of your crop is safe, and is all you expect from poor land, and can all be gathered in hot weather—long days—and before the heavy picking comes on. On your better lands you cannot afford to have *only* the early crop of bolls, but must manage to have it bear continuously, and in a condition to be less injured by these excessive spells of weather. This can be done by planting later and fertilizing more heavily to secure maturity in time. When thus planted there will not probably be any great amount of fruit on the stalk at the season those excessive spells, especially of dry and hot weather, come on; and the less fruit, at the time, the less the injury, and *vice versa*. Experience with fertilizers on cotton the past three years convinces me that early planted and heavily fertilized cotton will make the earliest yield, but later plantings a greater yield, though no very early picking. Cotton planted by the middle of May, well fertilized, with an ordinary fall, will all mature; whereas that planted first of April, and heavily fertilized, will secure an early bottom crop and picking, but will either not have any, or lose its top crop by being too late. An acre of cotton planted 20th of April, but with 320 pounds of fertilizer, half broadcast and rest in drill, opened 1352 pounds in September and 60 pounds since.—Another acre, 1000 pounds in September and 160 since. A half acre (same amount of fertilizers, but all in drill,) 532 pounds by September 23d, and 30 since. An acre of thinner land, prepared and planted in May with 200 pounds fertilizer, but not a good stand till June, from dry weather, made larger weed and more cotton.

The first from excessive wet and then heat, lost all but bolls in August—the latter not materially affected. The first, when picked in September, leaves could have been burnt on the ground,—now green again. Later, did not lose its leaves, and now presents the fall appearance of a crop matured before frost, and well opened to top.

In 1868 and 1869 I planted no early cotton, finished 16th of May, in thin but well prepared land, 200 lbs. of fertilizers in drill to acre. In 1869 a long and excessively hot spell, (or more properly term, in July) did not materially affect the crop, while more advanced cotton suffered severely. Result, no early picking,—no real bottom crop,—but heavily laden with what we call middle, and top crop, and all matured. A successful cotton planter in olden days, and now farming only as an ama-

teur, asked to-day why his thin land had made such a fine crop. I think I gave a satisfactory explanation in accordance with the above, and the additional reason, that his thin land had a fine crop of grass and weeds as a harvest yield from the previous year, to aid the fertilizers used. His reply was: First of May is the time to plant cotton. A neighbor agrees, in the main, with these views, except in quality of land for first planting. But I think I am right, for we all know that the thinner the land, the more profitable to have the crop made before the hot and dry summer weather sets in.

This communication is already too long, but I cannot close before adding several additional reasons for the above plan. 1st. Plant corn (here) very early, and cotton as above, and you can work progressively, almost one crop at a time, instead of all crowding at once. Hence more land can be better cultivated, and the moderately late planted cotton, will require much less work than if all were planted early, and the gathering of the crop can be managed much better, maturing as planted, successively.

In accordance with these views, except for the later plantings, use fertilizers less stimulating than Peruvian Guano alone. I believe that is considered the standard. The three acres referred to above were all fertilized with Peruvian Guano and dissolved bone, and less to the acre than is frequently recommended; good land requires only enough to give the plant a good start, and thereby earlier maturity.

If the cotton planter would improve instead of injure his land, by the use of fertilizers, let him plow deep, diversify, and rotate his crops in a way to have a good coat of vegetable matter to turn in every year, except when in cotton. Without this, his destruction is only a question of time.

JOHN T. WINGFIELD.

Washington, Ga., Dec. 20, 1870.

### THE NEXT COTTON CROP.

The course which is to be pursued by the planters of the South concerning the acreage to be put under cotton this spring, is a matter of great interest at the present time. The production of the staple has reached that point where it is likely to bring loss to the planter unless the natives of India, Brazil and Egypt turn their attention to other pursuits. Cotton can be produced as cheaply in the Southern States as in other quarters of the globe. The advantages of climate and soil are so superior as to more than counterbalance the high price of labor. But, in a close contest, it will be found that the cotton producers of India, Egypt and Brazil are not to be easily forced to abandon the culture of this staple. Their wants are few, and they are content

with extremely small profits. They will, in all probability, continue to produce just enough cotton to overstock the world when the American crop exceeds 2,500,000 bales.

The losses sustained by the South on the incoming crop of cotton have induced a general belief that in 1871 a small crop will be planted. With cotton at present prices there is little or no profit to the planter. He has labored during the year for the public. The world is benefitted by cheap cotton, but he is not. It is reduced to a question of profit or loss, and if there is a general belief throughout the Southern States that current prices are normal, and not likely to improve, less cotton will be produced, beyond a doubt.

It is yet too early to state with exactness what is the intention of planters. We (and in fact the whole country does) expect to see a great reduction in the cotton acreage, but as faithful chroniclers of facts we must say that nothing has yet transpired to warrant the assertion that such will really be the case.

From all parts of the South we hear of a strong demand for labor. Planters are securing all the available labor in their respective districts. This shows that the planters are far from being discouraged, and that the whole laboring force of the South is likely to be fully employed during the present season. While many planters are holding out for a reduction in wages, others are paying last year's rates.

These facts do not warrant the conclusion that a large cotton crop is in anticipation. We can only infer that as much land as possible will be cultivated, and that planters expect a more prosperous year is in store for them. The land will be put under cotton, corn, or other staple, as the planter deems proper.

In our own State, which produces more cotton to the acre than any other, there will be a great increase in the production of sugar. The old sugar planters are increasing their working force, and those who have hitherto cultivated cotton will turn their attention to the sweets.

We shall, from time to time, give such facts to our readers as will serve to form correct conclusions as to the agricultural prospects for the year.—*New Orleans Picayune.*

EXPERIMENT IN PLANTING COTTON.—A planter, near Columbus, Mississippi, experimenting on one acre, set his cotton plants three and a half feet apart, each way, thinning to two stalks in the hill, and cultivating in the same manner as with corn. The yield was more than double that grown in the old way, and in respect to the maturing of the bolls, advantage was found in the readier access of the sun.



## Grape Culture.

*For the Maryland Farmer.*

### THE GRAPE VINE.

Whether the Grape Vine originated in Asia, and followed closely civilization, or whether the many varieties sprang from different primordial species, yet it is subject to climatic conditions. The conditions of temperature and moisture are now better understood than in former times. With less than fifty-five degrees temperature for the growing months of April, May and June, and sixty-five degrees for ripening in July, August and September, no success in grape growing need be expected. At a temperature of sixty-five degrees for the first three above named months, and over seventy-five degrees for the latter three months, with soils and situations favorable, excellent grapes can be raised, and wine of superior quality can be made. Neither can we succeed in grape-growing if the average rainfall in April, May and June amounts to six inches, and the average in July, August and September as much as five inches. The hardier varieties can be grown with a rainfall for the first three months, not over four inches, and for the last three months not over three inches, other conditions favorable. Grapes of the best quality, however, can only be raised if the rainfall in the first three months named, is less than four inches per month—and the last three months less than two inches per month. Of course the humidity of the atmosphere in some parts of the country and dryness of air in others, will somewhat modify those conditions. A dry atmosphere, high temperature for the last three months, and not too great a change in the temperature in twenty four hours during the whole year, are the most favorable conditions for the growing of grapes. Species found in more Southern, will not do in higher Northern latitudes, and, *vica versa*. Natives of northern latitudes will not stand the southern heat. Thus the climate, the mean temperature, amount of rainfall, length of the growing season, certain extreme changes of temperature, the ameliorating influences of large bodies of water, aspect, and soil, exert a great influence on grape growing. European grapes for out door culture, in this country have proved failures in most instances. We must therefore look for species, indigenous here, and their descendants. Of those, we have only three, in the Middle States.

1st. *Vitis Labrusea*, or Northern fox grapes.

2nd. *Vitis Æstivalis*, summer or chicken grapes.

3d. *Vitis Cordifolia*, winter, or frost grapes.

The *Vitis Labrusea*, or fox grape, has very wooly leaves, rusty wooly beneath, berries large. It is the parent of all our large varieties; as the Cassady,

Catawba, Isabella, Concord, Hartford Prolific, Iona, Ives, Martha, Telegraph, Union Village, some of Roger's Hybrids, and many others. They require a deep soil, and do well on eastern, north-eastern, and even on northern slopes. You will find the fox grape mostly in bottom lands, in moist soils, and in swamps, ripening its fruit in heavy shade. They will do also on southern slopes, provided the soil is deep, and not too gravelly and arid, and their fruit not be too much exposed to the direct rays of a hot, vertical sun, or else mildew and rot will ensue.

The *Vitis Æstivalis*, or chicken grape, also erroneously called summer grape, for it ripens late, have downy young leaves, hairy beneath, smoother when old, green above; berries small, black. Their descendants are the Alvey, Cynthiana, Cunningham, Herbmont, Norton's Virginia and Rulander. They prefer a dry, poor soil, mixed with lime and decomposed rocks, with a southern and south-western exposure. They can endure almost the severest drought. You find them generally wild on southern slopes, in thin sandy soil, and among rocks in fence corners.

The *Cordifolia*, or frost grape, has thin, smooth leaves, green on both sides, but not shining; berries, small acid, ripening after frost. It grows in all the Eastern States, extends to the Rocky Mountains and even to Texas. Its descendants are the Clinton and Taylor Bult, and again their descendants. They are very hardy, do well in poor soil, and succeed in localities where all others fail. They ought to hang on the vines a considerable time after having turned black, and will then make a good heavy claret wine. Besides those enumerated, we have many new seedlings and hybrids, fertilized from the pollen of others, of which I will speak in future, when I will also describe the preparation of the soil, best variety for our climate, and mode of planting.

G. H. MITTNACHT.

*Pikesville, Jan. 23, 1871.*

### Terminology of the Vine.

Dr. Warde, from the Committee to whom was referred the subject of Terminology of the Vine, reported to a recent session of the Illinois Horticultural Society, as follows:

The stem is the main upright support. Arm—A branch of the stem trained horizontally, as on a trellis. Shoot—Green wood, as fruit shoots, young canes, and suckers. Lateral—A branch from a shoot. Tendril—A twining support. A Cane—A ripe shoot from the stem, an arm or lateral. Spur—A cane or lateral cut short, say, to one, two, or more eyes or buds. Joint, or Node—An enlarged part of the cane, whence come the buds, leaves, and tendrils. Internode—Between the joints.

A valuable lesson to young horticulturists.

## GRAFTING GRAPE VINES.

BY DAVID Z. EVANS, JR., *Chesapeake City, Md.*

Grafting grape vines is not such a tedious or uncertain operation as many would suppose, although many experts cloak it in secrecy, or, if they do say anything in regard to it, give it only vaguely, or in such an uncertain way that persons who would like to try the experiment are deterred from fear of failure, unless they resort to many expensive and trying expedients to accomplish their purpose. The vine can be readily grafted by any one who has a moderate amount of intelligence; but some care is requisite in this branch of horticulture, as well as in any other, to produce like good results, and to execute the operation neatly and expeditiously requires some practice.

There are several ways of grafting; but I will only give two methods, both of which are very good; one can be used where the particular vine grafted is regarded as very choice and valuable, and the other where a great number of vines are to be attended to, although we think one plan as good as the other, and equally sure; but either one or both can be used as best suited to the taste, convenience, &c., of the different operators.

The first plan which is, as a general thing, only used where a large area is grafted, is substantially as follows: In early winter, or in the fall, after the sap has ceased to flow, or in early spring, cut the vine to be grafted down almost even with the ground; now split the stock, and insert one or two grafts—which should be wedged shaped, and as fresh as convenient; mound up the soil on all sides of the graft, covering the junction with ground about two or three inches, and leave in this condition; if well done, no fear of failure need be apprehended; it is very quickly done, and a great many vines can be grafted in a comparatively short space. The vine must be *saved* off, not chopped or cut as many do, very often splitting the stock and irreparably injuring the vine.

The other way is the same as the first mentioned, as far as the mere grafting goes; the only difference consists in the mode of covering; while in the first mentioned way the ground comes in immediate contact with the junction of the stock and graft, in this it is first covered with an inverted flower pot, and the ground mounded around *that*; this plan is rather more expensive, but the ground can be moved readily in the spring, leaving the vine in an uninjured condition, not being so liable to be knocked about, or the grafts accidentally or unintentionally displaced; but both plans have, of course, their own converts, so I leave to the reader to take whichever plan in his judgment may seem the most practicable or advisable.—*The Southern Planter and Farmer.*

## Pruning Vines in Cold Weather.

Pruning vines while they are frozen is said to be very injurious. We are not aware, however, that any of our vineyardists have ever conducted a series of experiments to prove the truth or falsity of this very common, and often reiterated assertion. If the young or old canes are handled and bent while frozen, it would, no doubt, break some of the cells and injure them; but in ordinary pruning, that portion of the vine allowed to remain need not be in the least disturbed; for all tying up to stakes or trellises can be done in pleasant weather when there is no frost in the vines.

In pruning a cane we cut between the buds; and all that portion above the last bud left on the cane will die whether the separation is made with a knife, shears, or when frozen or otherwise. Pruning vines in very cold weather is certainly not pleasant work; but so far as being injurious, either to the vine, or the cuttings removed, we have our doubts, which are strengthened by the fact that thousands of vines are annually pruned while frozen without any apparent injury resulting therefrom.—*Rural New Yorker.*

MANURE.—Old and exhausted vineyards can be manured during frosty weather. The best for vines is surface soil, leaf mould, and decomposed vegetable matter or compost. Animal manures should be used sparingly, and always be well decomposed, before using. Scatter the soil or manure over the surface, and turn under in the Spring. Heavy, clayey soils may be benefited very much by sprinkling with lime, gypsum, &c.

PRUNING.—In pruning your vines, do not cut too close to the eye, as the upper bud will often suffer from cold and the influences of the weather, if the cut is too close.

GROWING POTATOES BY MULCHING.—A New Hampshire farmer tried the following experiment on a rough rocky, hassocky plot of land, too wet for ordinary cultivation, and unfit for scythe or plow. He spread on the land a quantity of small potatoes, and covered them with a crate of refuse straw and yard and barn rakings, giving them no further care. In due time, when the potatoes were grown, he drew them out with an iron-toothed rake. The product proved to be good, fair tubers of better quality than those grown by him in the usual way, and produced at trifling cost. He had several times grown potatoes by the process of mulching, obtaining yields superior in quantity and quality to those of seed planted in the ground.

IRRIGATE land one season, and the effect will be seen the next also—this on grass more particularly.



## Horticultural.

### The Best Time for Cutting Grafts.

In several publications we notice that the cutting of grafts in the fall, "or before the sharp cold of winter injures their vitality," is highly recommended. Directions are thus given how they are to be preserved through the winter: "They may be packed away in boxes of fine damp moss, damp sawdust, or buried in the earth or sand." There is a great deal more added which we do not think worth while to quote. This mode may be a very good one, but we have never tried it and just now do not seem in the mode to do so. We have done most of our own grafting, and have been successful. We never cut our grafts before February, and if the ground is not frozen stick them in at the foot of the tree, then the variety is known without labeling. If the ground is frozen they are tied up, the bunch labeled and buried under a shed or in a rather dry place. We have set seventy of these grafts (pears) at one time *and every one of them grew*. Once on a time we employed a professed grafter, who brought his own scions (plums) and set thirty-two for us, *every one of which died*. The following Spring we thought to try our own hand at it, and set sixteen (plums) on a tree fifteen years planted, the grafts cut as usual in February, and eleven of them grew. This we thought was doing pretty well with plums. If the grafts are carefully preserved and properly set, it makes no difference whether cut in fall or spring.—*Germantown Tel.*

### Planting Apple-Orchards.

No man, in the review of the past season, can say that the apple trees have done bearing. The yield has been bountiful, notwithstanding the great drought, and apples have been a drug in many communities, yet good winter apples are now bringing remunerative prices—three dollars a barrel and upward. Thousands of barrels have been sent into New England, and are now selling in sight of farms once blessed with productive orchards. The excuse for not planting has been the failure of the old trees to bear. Why should they bear, given over as they have been to utter neglect for a whole generation? A tree can no more bear fruit without nourishment than a cow can give milk without fodder. There are orchards in the older parts of the country well fed and as productive as ever. There was never more encouragement to plant good varieties of the apple than now. There is no danger of overstocking the market with good, sound winter apples. Even in this year of plenty, the long-keeping varieties will bring good prices. Every farm should have its orchard.—*Hearth and Home.*

### Pruning.

There is scarcely a week, certainly not a month, in the whole year, that has not been recommended, by excellent authorities too, as the best time for pruning. It may be fairly concluded, therefore, that the orchard-grower cannot go far wrong in choosing his time. It is very generally believed, and it is safe to say with good reason, that it is not well to prune when the tree is frozen, nor when the sap begins to flow in the spring. Nevertheless, there are not wanting instances where trees have been beneficially trimmed at those seasons. We do not venture to give a general rule, but until experiments can be tried, it is best to follow the practice prevailing in the region where the orchard lies. Nature's adjustment of cause and effect are so infinitely delicate, that no rule can be regarded as trustworthy until it has been tested by a long and careful series of experiments, and to apply such a test, the farmer or fruit grower must keep a systematic record of trees and crops, and must, withal, have a very distinct notion of what he wishes to ascertain. When once the time for pruning is fixed upon, and the necessary cutting done, it is not a difficult matter to care for the mutilated limbs. A coat of hot grafting wax is very beneficial, especially in the case of large limbs, as it prevents its decay. A very thick coat is not required, and it is, in fact, sometimes injurious. Apply the hot wax, and then dust it over with as much fine sand as will adhere. A solution of gum shellac in alcohol is a very good substitute for wax, and, fortunately, there is no difficulty in preparing or using it. The gum has simply to be broken into conveniently small pieces and placed in alcohol, when it will dissolve, and in the course of a few hours will be ready for use. It is applied with a brush, which can be washed perfectly clean in alcohol, if desired. To insure the adherence of either the wax or the shellac, allow the wounds to dry for a day or two before being covered, but do not forget them altogether, for if you prune at all, it is by all means best to do the whole thing effectually.

### The Peach Borer.

At a recent meeting of the Missouri Horticultural Society, Prof. Riley gave some information on the peach borer, an insect which is very destructive to the peach. It is produced by a moth, the larvae of which does not mind the soap. Mounding around the butt of the tree is a remedy which prevents the moth from laying its eggs at the base of the trunk. But the mound should be leveled down early in the spring, and rebuilt about the first of May.

He that stays in the valley shall never get over the hill.

## The Florist.

### FLORICULTURE--FOR FEBRUARY.

PREPARED BY JOHN FEAST, Florist, Baltimore.

*Greenhouses* this month will begin to look gay, as plants will come into flower as the season advances, and the sun having more power they will require less fire heat, which is more conducive to the health of plants in general.

*Camellias* will now be in their height of flowering, and need only a regular temperature and sufficient water. Now is the time to increase them by grafting or otherwise, and hybridizing such as bear seed by the pollen from fine varieties. The operation is very simple—by taking the pollen with a small camel hair brush, and impregnating the stigma of the seed bearing one; choose a fine day, and when the flowers are in perfection; be careful and do not syringe over them until set, as too much moisture causes the seed vessel to fall off. By this process all new varieties are raised, both in trees, plants, &c. Many kinds raised in this country equal any of the imported varieties, which together number one thousand or more now under cultivation.

*Dahlias*.—If an increase of stock is wanted, put the roots where they will have more warmth, so as to start their growth—take the young shoots off as cuttings, and divide the roots, putting them in separate pots with names attached.

*Fuchsias* will propagate freely at this time, and, with care, will make fine plants this season; re-pot such as need larger pots; give occasionally liquid manure water; keep clean and syringe frequently, to avoid the red spider, for if these hints are observed, no plant is more beautiful when in bloom.

*Ferns* are a very interesting tribe of plants. Like the *Lycopodes* for baskets, or any decorative work in a parlor, they require more moisture than is usually given them, but when in fine condition their foliage are equal to most flowers, and by some the foliage of plants are more admired than flowers, owing to so much diversity.

Some of the greenhouse bulbs, as *Oraxis*, *Cyclamens*, that have done flowering will require less water; let them dry off gradually, otherwise they will decay, as many are annually lost for need of proper attention.

*Amygdalus*, *Brunswigias*, *Lillies*, *Crinums* and such flowering bulbs will need re-potting; put them in good sized pots, which is better than changing so often; give them goodrich soil and plenty of drainage.

*Ericas*, *Epaeris*, *Diosmas* and all hardy greenhouse cape plants will need attention; re-pot those needing larger pots. Tie up and prune in a proper shape, so as to give them a fine effect; propagate at this time by cuttings, to keep a stock of young plants on hand; such plants require in this country a stiffer loam than peat soil, which is too porous, causing injury to the roots by the summer sun.

*Achemenes*, *Gesnerias*, *Tydeas*, *Caladinus*, and such as have been dormant through the winter, re-pot

in separate pots; the proper soil to grow them is a mixture of peat, rotted leaves and loam, equal parts, mixed together; be careful in watering at first, as too much injures the roots till they begin to grow. Keep in a warm situation.

*Pelargoniums*, *Geraniums*.—Give a watering of liquid water, occasionally furnished with tobacco, and keep clean, and such as need larger pots give them their last move before flowering; give plenty of air of fine days, which is of great benefit to all plants to ensure a fine bloom.

*Roses* showing signs of growth re-pot, if needed, and those struck from cuttings re-pot in small pots; give them a little heat after potting, and sufficient water to moisten the soil through the pot, as many die after being removed through this neglect.

*Seeds of Annuals and Biennials* may be sown to have an early stock of plants for flowering, and such as are growing encourage by giving them plenty of room to get strong, which enables them to flower much finer; tie all up neatly of a spreading habit, and other woody plants, as *Clematis*, *Jesamines*, *Tecomas*, *Passion Flowers*. They will require pruning in and attending to; be careful that the mealy bug is destroyed, as they are much infested with it; wash them well with fresh water with a strong force of syringe or otherwise.

As the season advances, prepare for spring, by pruning all trees, shrubs and plants, vines, &c.—Have the ground in readiness for cropping and sowing of different seeds. Transplanting can be done—the sooner the better, if the weather will permit. The dividing of herbaceous plants may be done at this time, which will greatly facilitate the spring work when other operations will demand your care and close attention.

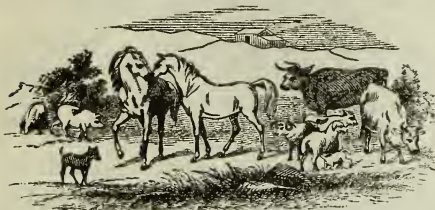
### Fresh Blown Flowers in Winter.

Choose some of the most powerful buds of the flowers you would preserve, such as are latest in blowing, and ready to open; cut them off with a pair of scissors, leaving to each, if possible, a piece of the stem three inches long; cover the end of the stem immediately with sealing-wax, and, when the buds are a little shrunk and wrinkled, wrap each of them up separately in a piece of paper, perfectly clean and dry, and lock them up in a dry box or drawer, and they will keep without corrupting. In winter, or any other time, when you would have the flowers blow, take the buds at night and cut off the end of the stem sealed with wax, and put the buds into water, wherein a little nitre or salt has been diffused; and the next day you will have the pleasure of seeing the buds open and expand themselves, and the flowers display their most lovely colors and breathe their agreeable odors.—*Manufacturer and Builder*.

*Asters*.—The numerous forms of the Aster and the now great variety of rich colors of its perfectly double flowers make it a leading favorite, and no flower garden can be regarded as complete without a representation from this splendid class of flowers. They prefer a deep, rich soil. Seed may be sown in a frame or the open border. The taller varieties should stand about a foot in the bed where they are to bloom, and the dwarf about half the distance—or they may be set singly or in groups of a few plants each.



## Live Stock Register.



### POINTS OF A GOOD BREEDING SOW.

What constitutes a good breeding sow? In addition to the points of a good boar, with a few exceptions, a breeding sow should be selected from a breed apt to fatten readily, and the individuals of which have not become deteriorated by injudicious crosses, or *by breeding in-and-in*. She should be the fairest of the litter, whose dam is a good nurse—a good milker—of mild disposition—and of good fecundity. A sow that has bad points, or blemishes, should be at once rejected; for such animals are apt to transmit these *first* to their progeny. A sow must be allowed to farrow two or three times, before it is safe to conclude upon her excellence as a breeder. When a young sow brings forth ten or twelve at one farrowing, and is *careful* of them, and does not think more of gormandizing at the trough, or of running alone in the field, one need not hesitate to estimate her fairly as a good breeder. But, on the contrary, if a sow brings forth but six or eight indifferent pigs, and roots them about in her nest, and steps on them after, and yields but a small supply of milk, and above all is inclined to eat them, after weaning the pigs, she should be fattened at once and slaughtered.

#### PERIOD OF GESTATION.

The period of the sow's gestation is generally sixteen weeks. Sometimes sows go eighteen or twenty weeks before they farrow. Sometimes their gestation is from twelve to fourteen weeks. But such litters are apt to be premature; and the pigs commonly need more care to raise them, than if the dam had fulfilled her proper time.

Young sows that have never been introduced to the boar, are sometimes in heat every few days; but after they have raised one or two litters of pigs, if in health, and not too fat, they will generally be in heat about every eighteen or twenty days. Sows of different dispositions exhibit different signs of heat. Some keep up an incessant roaring, and a constant smacking of their chops, while those of a mild and peaceable disposition, will appear restless, and approach other animals, or mankind, *very fauningly*,

and follow any person as far as possible. Sometimes, when closely confined, they will wander about their pen, and have but little appetite for their food. The enlargement and protrusion of the vagina is generally an unmistakable sign. But, when there are several together the surest sign is their *riding each other*. Generally speaking, there is little difficulty in determining when a sow is in heat.

#### BREEDING TOO YOUNG.

Before the sow is allowed to pair with the boar, she should have attained to a fair size and age. If her frame is well developed at eight or ten months of age, there could be but little objection to her breeding; but, as a general thing, sows should not be allowed to take the boar until they are one year old or more. It is an unwise policy to allow young sows to breed before they have some capacity of chest. It cannot be expected that very young, half-grown sows will be able to bring forth a large number of good-sized, fat, healthy pigs at once. If sows are young and small, they are too apt to have very small and tender pigs. Allowing a young sow to breed, while she is growing thrifly checks her growth, weakens her constitution; and her farrowing will be more difficult, and she will be less inclined to exercise that care over her first litter, that she would, if she were one year old.

#### MANAGEMENT WHEN PAIRING.

When a sow is to pair with the boar, they should be turned into a small yard or sty, where they will not be annoyed by other hogs; and after one good service or at the most two, they should be separated. Permitting them to have uninterrupted connection, is not only pernicious to the male, but often injurious to the female. It is confidently believed, that a sow will have a greater number of pigs from one service than from an unlimited number. A sow is no more apt to be impregnated by receiving the male a second, third or fourth time, than from once. The first service is, generally, the most effectual. Then the semen is more abundant. Swine, no more than other animals, can be allowed unrestrained indulgence in their sexual connection, with impunity to themselves and their progeny; and there is much reason for believing, that oft repeated sexual connection is a fruitful source of barrenness. If one good service will suffice to impregnate the ovary—if a sow will bring more, and fairer pigs with one connection with the boar, why repeat the operation? Sometimes, if the passion appears more ardent in the sow than in the boar, it would be well in an hour or so after the first service to allow a second. But, as a general rule, we need entertain no doubts, if a sow has enjoyed one uninterrupted coition, of her being effectually impregnated.

— *Working Farmer.*

## HOG CHOLERA.

A correspondent of the Agricultural Department writes: "Hog cholera has prevailed to a considerable extent in the western portion of Fairfax county, Va., some farmers losing their entire stock. Constipation of the bowels attends the disease, and the only remedy (which has, by no means, always proved successful) is salts; three table-spoonfuls at a dose, for a hog weighing one hundred pounds, followed by the same quantity of castor oil, twelve hours after."

Another correspondent of the same Department writing from Illinois, on the same subject, says:

"So thoroughly am I convinced of the use of preventives, that for the last three or four years I have been in the habit of feeding my hogs daily with a mixture composed of various ingredients, the basis of which is kitchen slops, to which is added a plentiful supply of salt, bran, Irish potatoes, cabbage, turnips, and other vegetables, all of which I endeavor to raise for that purpose in sufficient quantities. The above are all boiled together and fed when cool in large troughs, to which all the hogs have access. A few years since I lost some hogs with cholera, but since I commenced the above practice I have not lost a single hog with cholera, and but very few with any other disease, although I keep a number varying from twenty to forty head. At the same time my neighbors are continually complaining to me of their losses, and although I explain to them my plan of treatment, and that my hogs don't die of cholera, very few of them seem to profit by my experience. "Well," they reply, "we don't know how it is; we slop our hogs also, *sometimes*, and still they die." Besides slop, I feed my hogs dry corn daily. Whether or not it is the slop which keeps off the cholera I cannot positively say; but I certainly should be afraid to feed them entirely on corn or any other dry food."

**FEEDING MILCH COWS WITH CORN FODDER.**—A dairy farmer states that in June, 1863, he sowed an acre of corn in drills, and on the first of July commenced cutting and feeding to twenty-six cows, daily. When the September rains came he omitted the cornfodder for some days, and the consequence was a decrease in the yield of milk of fifty-two pounds per day, or an average decrease of two pounds per cow. The corn feeding being resumed the cows in four days regained the usual yield.

**CHARCOAL, &c. FOR HOGS.**—Hogs that are much confined, and can not get to the earth, will frequently be benefited by having a little charcoal, soft brick-bats, or soft rotten wood thrown in to them; and a trifling quantity of brimstone mixed in their food, occasionally, is an excellent thing.

## USEFUL RECIPES.

We glean the following from the *American Stock Journal*:

**GARGET.**—Give your cow an ounce of saltpetre in a warm bran mash and wash the udder thoroughly in strong soap suds as hot as you can apply with your hands; do not let the animal be exposed to the cold for several days.

**EXPPELLING WORMS FROM HORSES.**—Take one quart of alum, one part saltpetre, one part copperas, pulverize, and mix with four parts salt; give three times a week, a table-spoonful at a time.

**KICKING COWS.**—Something a little extra by way of food given to a cow while milking will sometimes prove effectual. A confirmed kicker, however, is a bad subject, and the cheapest way often is to make beef of her. In his book on American Cattle, Mr. Allen says, that he has milked valuable cows addicted to kicking by taking the iron *forceps*, used for holding cattle by the nostrils, and tying them by a rope or strap to a beam over head, and drawing up their nose at an elevation and there securing them while they are milked. Some milkers are in the habit of pressing sharp finger nails against the sensitive teats, and then abuse the cows because they kick.

**LINIMENT FOR ANIMALS.**—An excellent liniment for wounds, bruises, sprains, and swellings may be made as follows: A pint of good vinegar, a pint of soft soap, a handful of salt, and a tablespoonful of saltpetre. Mix thoroughly and bottle for use. This is very efficacious, and is cheaply and easily prepared.

**TO REMOVE A WEN.**—Take a bottle with a large neck, fill with balm of Gilead buds, (say one pint), put in enough of the best of alcohol to cover the buds; let it stand in a warm place two or three days, shaking it often. When the gum is thoroughly mixed with alcohol, apply two or three times per day with a swab. Continue until the bunch softens; then it may be opened; then apply for a few days, and the wen will be thoroughly and permanently cured. The buds gathered in the early spring are best.

**COLIC IN HORSES.**—Take one tea-spoonful of the salt of tartar, to one pint of water—shake well, and drench the animal with it, and if not relieved in one-half hour, repeat the dose; but I do not think you will have to repeat the dose.

**THRUSH IN FOOT.**—First cut away all loose horn, so as to fully expose the diseased surface; after cleaning the frog perfectly, apply the following mixture: Tar, four parts; sulphate of zinc in fine powder, one part; mix thoroughly, and by means of a thin piece of tough wood spread it over the diseased parts, pushing it well into the cleft and commissures of the frog. The frog must be protected by a bar shoe. By persevering in the use of this dressing, and by keeping the foot dry, the foul smell will soon cease. The ointment should be applied about twice a week.

**SORE EYES IN CATTLE.**—Cattle are liable to suffer from ophthalmia from chaff, or other foreign substance getting into their eyes. The symptoms are irritability of the eyes, watery discharges, and when the foreign substance becomes impacted in the cornea, that part becomes inflamed and ultimately opaque. In the early stage the eye should be examined, and the foreign substance removed, which can be done by inverting the eyelids, if the substance is not visible, and removing it with a pocket handkerchief. The results of such an accident should be treated by hot fomentations, and the occasional application of a lotion composed of a dram of tincture of opium, to four ounces of water.





## Ladies Department.

### THE YOUNG WIDOW.

She is cunning—sometimes witty,  
Free and easy, but not bold;  
Like an apple, ripe and mellow,  
Not too young and not too old;  
Half-inviting, half-repellent.  
Now advancing, and now shy;  
There is mischief in her laughter,  
There is danger in her eye.

She has studied human nature;  
She is schooled in every art,  
She has taken her diploma,  
As the mistress of the heart!  
She can tell the very moment  
When to sigh and when to smile.  
Oh, a maid is sometimes charming,  
But a widow, all the while!

Are you sad? oh, then how serious  
Will her pretty face become!  
You are angry; she is wretched,  
Saddened, friendless, tearless, dumb.  
Are you mirthful? how her laughter,  
Silver-sounding, will ring out?  
She can lure, and catch and play you,  
As an angler does a trout!

Ah! "old fossils," nearly fifty,  
Who are plotting, deep and wise;  
Ye "Adonises," of twenty  
With the love-light in your eyes!  
You may practice all the lessons  
Taught by Cupid since the fall,  
But I know a little widow  
Who can win and fool you all!

Original.

### THE CLOUDY EVENING.

It was the 28th of August, 1856. Already nature was assuming the sombre hues of autumn, telling us plainly enough, that, pass a few short months and winter's icy breath would congeal the brooklets and scatter the snow-flakes where now grew the wild flowers in such beautiful luxuriance. The day had been bright and lovely. A few fleecy cumuli were now and then seen chasing each other from the west, and casting their fitting shadows over the landscape; but as evening drew on they began to gather in murky darkness along the western horizon, and soon the low toned thunder gave token that a storm was approaching.

Lenson Ward had finished a hard day's work, and throwing on a coat, set off to pay his usual evening visit to his betrothed, the amiable Delia Bland. But the rapid approach of the storm obliged him to take shelter in an old building that stood by the wayside. It was now very dark, and while Lenson was groping around for a seat, his ear caught a voice without, and he found that others were seeking the friendly shelter of the old house till the storm should pass. He saw by the dim light of the doorway a man enter apparently bearing a female figure in his arms; and from her sighs and groans, Lenson knew that she was weeping. In his sudden surprise Lenson remained silent, especially as the gloom completely hid him from view; but imagine his feelings at the following conversation that now took place:

"Oh! why do you treat me thus? Why do you tear me from my home and all that I hold dear on earth? Oh! if you have a human heart, I implore you to release me."

"Swear that you will be mine, and I will. Say that ere to-morrow dawns you will be my bride, and I will take you back to your home. This is the condition."

"Never, while I live, will I consent to wed a man I do not

love. You may steal me away, you may imprison, you may torture me, but I will never be yours."

"I swear by the infernal powers you shall. Before to-morrow's sun shall rise, you must, willingly or unwillingly, be mine. I swear it. Come, the storm has passed, let us hasten to the priest's, for we must be far away before daylight dawns again."

"Oh, God, protect a helpless woman! Must I thus be torn from my parents and the society of loved ones, and doomed to life long misery with one I hate? Can no one hear me? Is there none to help me?"

"Yes," shouted Lenson, springing forward, "here is one that will rescue you, or die in the attempt. Villain, what dost thou? How dare you transgress the laws of God and man by tearing a helpless girl away from her home? and"—two pistol shots were fired in quick succession, one of which grazed Lenson's shoulder, but Lenson's strong arm feared nothing in human shape. He struck the monster a stunning blow, and a desperate hand and hand encounter took place. Lenson soon learned that his antagonist was the stronger, but he believed that his power of endurance was greater. And so it proved. The villain finding that he was about to be overcome, disengaged himself, sprang to his horse, and took to flight.

Lenson now discovered that the woman who had been the subject of this cruel outrage was his own idolized Delia; and that the fiend whose attempt to carry her off by force had been so providentially frustrated, was his rival and bitterest enemy, the braggart, Nathan Ulster.

Imprinting a loving kiss upon her brow, Lenson and Delia knelt and poured out their hearts in gratitude to God for their deliverance. Lenson now conducted Delia to her home, much to the relief of her distressed parents, who knew not what had become of her. And when the story of her seizure and rescue became known, with moist eyes and grateful hearts they all gathered around the family altar, and the aged father, in trembling accents, thanked God that his child had been rescued from a life of misery. Arising, the father turned to Lenson and said: "Noble youth, you have saved my daughter from a fate worse than death. I knew before that your hearts were plighted, but you have now won her anew. Take her, she is thine. A father's blessings attend you both."

It was a brilliant and happy party that the next evening found gathered at "Sylvan Shade." The news of Ulster's crime had spread like wild-fire. The good gentry for many a mile around had come to witness the nuptials and bless the union of two loving and trusting hearts.

Years have now passed, they have been prospered and happy; but Lenson and Delia have not forgotten the tragic events of the "Cloudy Evening," and the 28th of August has become a "thanksgiving day" at the beautiful "Rural Retreat," the country home of Lenson and Delia. May they long live to enjoy the sweets of country life, and the pleasure of each other's society.

Cottage Home, Surry, Va.

B. W. JONES.

### EDUCATION FOR PRETTY GIRLS.

Pretty girls, unless they have wise mothers, are more educated by the opposite sex than their own. Put them where you will, there is always some man busying himself in their instruction; and the burden of masculine teaching is generally about the same, and might be stereotyped as follows: "You don't need to be or do anything. Your business in life is to look pretty and amuse us. You don't need to study; you know all by nature that a woman need to know. The only sense you need is lovely nonsense.—You are, by virtue of being pretty, superior to anything but what you are."—*Mrs. Stowe.*



## MARRIAGE.

Leigh Hunt concludes an essay on marriage as follows:—

"There is no one thing more lovely in this life, more full of the divine courage, than a young maiden, from her past life, from her happy childhood, when she rambled over every field and moor around her home; when a mother anticipated her wants and soothed her little cares, when her brothers and sisters grew from merry playmates to loving, trustful friends; from Christmas gatherings and romps, the summer festival in bower or garden, from the room sanctified by the death of relatives; from the secure backgrounds of her childhood and girlhood and maidenhood, looks in the dark and unilluminated future, away from all that, and yet unterrified, undaunted, leans her fair cheek upon her lover's breast, and whispers, 'Dear heart! I cannot see, but I believe. The past was beautiful, but the future I can trust—with thee.'"

## RUSTIC PICTURE FRAMES.

Rustic wood for this and other purposes is in great favor now-a-days. With a little care in selection of material, and skill in handling tools, we may frame our engravings and paintings at slight cost. Oak wood, denuded of the bark, presents a beautifully corrugated surface, out of which the knife easily removes the few fibres which adhere, and it is ready for varnishing as soon as it is seasoned. The "season cracks," should they occur, may be filled with dark brown putty, and will even heighten the general effect.

Take a thin board, of the right size and shape, for the foundation or "mat;" saw out the inner oval or rectangular form to suit the picture. Nail on the edge a rustic frame made of the branches of hard, seasoned wood, and garnish the corners with some pretty device, such, for instance, as a cluster of acorns. Ivy may be drained to grow around these frames with beautiful effect.

## VIRTUE.—Pope.

But sometimes Virtue starves, while Vice is fed?  
What then? Is the reward of Virtue bread;  
That, Vice may merit—'tis the price of toil;  
The knave deserves it, when he tills the soil;  
The knave deserves it, when he tempts the main,  
Where folly fights for Kings, or dives for gain.  
The good man may be weak, be indolent,  
Nor is his claim to plenty, but content.  
But grant him Riches, your demand is o'er?  
No—shall the good want Health, the good want Power?  
Add Health and Power, and every earthly thing,  
Why bounded power? why private? why no King?  
Nay, why external for internal given?  
Why is not man a God, and earth a Heaven?  
Who ask and reason thus, will scarce conceive  
God gives enough, while he has more to give;  
Immense the power, immense were the demand;  
Say, at what part of Nature will they stand?

## LOVE.—Byron.

Yes, Love indeed is light from Heaven,  
A spark of that immortal fire  
With Angels shared, by Alla given,  
To lift from Earth our low desire.  
Devotion wafts the mind above,  
But Heaven itself descends in Love;  
A feeling from the Godhead caught,  
To wean from self each sordid thought;  
A ray of Him who form'd the whole;  
A glory circling round the Soul!

**To Destroy Bugs.**—A small lump of gum camphor put into your bags with beans and garden peas will destroy the bug. A piece as large as a hickory nut is enough for a gallon bag.

## DOMESTIC RECIPES.

**ORANGE CREAM.**—Pare the rind of an orange very thin, and squeeze the juice of four oranges, and put it, with the peel, into a saucepan with one pint of water, eight ounces of sugar, and the whites of five eggs, well beaten. Mix all together, place it over a slow fire, stir it in one direction until it looks thick and white, strain it through a gauze sieve, and stir it till cold. Beat the yolks of the five eggs very thoroughly, and add them to the contents of the saucepan, with some cream. Stir all together over the fire till ready to boil, pour it into a basin, and again stir it till quite cold before putting it into glasses.

**SNOW CREAM.**—Put in a stewpan four ounces of ground rice, two ounces of sugar, a few drops of the essence of almonds, or any other essence you choose, with two ounces, of fresh butter. Add a quart of milk, boil from fifteen to twenty minutes, till it forms a smooth substance, though not too thick; then pour into a mould previously buttered, and serve when cold and well set. If the mould be dipped in warm water, the cream will turn out like a jelly. If no mould, put either in cups or a piedish. The rice had better be done a little too much than under.

**VELVET CREAM.**—To a pint of cream put a very little sugar, keep stirring it over the fire till the sugar is dissolved, and then take it off; but keep on stirring it till it is about the warmth of new milk, after which pour it through a fine colander into a dish containing three spoonfuls of lemon or orange juice, a little grated peel, and a little fruit marmalade, chopped small, with two spoonfuls of white wine. This should be prepared the evening before it is wanted.

**CHOCOLATE CREAMS.**—Take fresh milk enough to fill twelve glasses, and boil with it two ounces of grated chocolate and six ounces of white sugar; then beat the yolks of six eggs, to which add slowly the chocolate milk, turning slowly one way. Flavor with vanilla boiled in milk. When quite mixed, fill your cups and place in water and boil for an hour. Serve when cold.

**APPLE CREAM.**—Boil twelve apples in water till soft, take off the peel and press the pulp through a hair sieve upon half a pound of pounded sugar; whip the whites of two eggs, add them to the apples, and beat all together till it becomes very stiff and looks quite white. Serve it heaped up on a dish.

**ITALIAN CREAM.**—Take one pint of cream and half a pint of milk, make it hot, sweetening it to taste, and a flavoring it with lemon-peel. Beat up the yolks of eight eggs, beat up all together, and set it over a slow fire to thicken. Have ready an ounce of isinglass, melted and strained, which add to the cream. Whip it well, and pour it into the mould.

**SPANISH CREAM.**—Half a pint of cream, same of new milk, three ounces of rice flour, a tablespoonful of peach or orange flower water; sweeten it to taste. Boil till it is stiff, stirring it constantly, and when it will leave the side of the pan, put it into a mould which has first been put in cold water.

**SCOTCH CREAM.**—Put to a quart of cream the whites of three eggs well beaten, a teaspoonful of sweet wine, sugar to taste, and a bit of lemon-peel; whip it to a froth, remove the peel, and serve in a dish.

**CALEDONIAN CREAM.**—The whites of two eggs, two spoonfuls of loaf-sugar, two of raspberry jam, two of currant jelly, all to be beaten together with a silver spoon till so thick that the spoon will stand upright in it.

**FRENCH CREAM.**—Half an ounce of gelatine, soaked in a cup of light wine, let it boil over the fire, then stir in one pint of sweet cream. Let it nearly boil again, sweeten to your taste, and cool in a mould. To be eaten with cream. To be made the day before using.

## CULTIVATION OF TOBACCO.

**PLANT BEDS.**—Burn on a wet post oak land, indicating a close compact soil, it matters not whether rich or poor. Let so much of that character of soil, with a good southern or south-eastern exposure as may be necessary, be burnt hard enough to destroy all grass seeds which the soil may contain. After having cooled, sweep off all coals and sow one bushel of pulverized stable or hen manure, or hog hair, to every 60 square yards; chop in with short boes, and with hand rakes reduced to a fine tilth: lay off in three feet beds, and sow one tablespoonful of seed, after having mixed well in a pint of dry ash or soil, to every 80 square feet; then tramp or roll the bed hard, and cover with brush *free of leaves*; cut a drain around the bed to prevent overflowing after rains. Should it be a dry and cold spring the fly will prove troublesome. To prevent this, sprinkle twice a week with ambler (a decoction of tobacco) and sow plaster on while wet. When you discover that the plants are too thick, thin them out by hand, so that the remaining ones may strike a good root. It is much better to manure the beds before sowing the seed than after, as manuring when the plants are up renders them very tender, and they will not grow off when set out as readily as those that are not manured at all.

When you have finished planting, hoe up all remaining plants on the bed and cover with corn-stalks six inches thick. Let them remain until burning time comes around again, and then cover thinly with brush and burn again. This plan will save time and fuel, and will answer all purposes, enabling you to raise plants from the same bed year after year.—ROBERT ROSE, in *Petersburg Rural Messenger*.

## How to Escape Tobacco Worms.

Every person who lives in a tobacco country knows how troublesome the horn-worm is, and what labor it requires to destroy these insects and so prevent them from riddling the tobacco leaves as they ripen on the hill. Some of our North Carolina neighbors, we learn, have of late adopted an easy method of protecting their tobacco crops against this worm. They simply use a solution of cobalt (or fly-stone,) to be had at all drug stores, which destroys the tobacco-fly that lays the egg that hatches the worm. The common Jamestown weed, which vegetates everywhere, is allowed to grow in limited numbers in the tobacco grounds and in the fence corners, and the cobalt in a powdered state, mixed in a solution of honey-water, is dropped in the blossoms of the plant. As the tobacco-flies feed freely from the flowers of this weed, they imbibe the poison, which kills them almost in-

stantaneously. We are told that where the specific is used the dead flies may be seen laid out on the ground far and near. Of course, the fly being dead, the egg is not laid, and the worm is not hatched — *Tobacco Leaf*.

## Unoccupied Lands in the Territories.

It is wonderful, the land that still awaits occupation of the immigrant to the States. There are nearly a thousand million acres of land in the territories. The vast empire is not, of course, furnished with railroads and other modern appliances; but it affords at least all the comforts enjoyed by the old settler, that sturdy pioneer who reduced the wilderness to productive plains as he traveled onward. The lands of the territories are thus estimated:

	Acres.
Washington .....	44,796,160
New Mexico.....	77,563,640
Utah.....	54,065,013
Dacotah.....	96,586,128
Colorado.....	66,280,000
Montana.....	92,016,640
Arizona.....	72,906,240
Idaho.....	55,288,160
Wyoming.....	62,645,068
Indian.....	44,154,250
Alaska.....	309,529,600

In all this vast area there are probably not more than half a million of white inhabitants. In natural resources this territorial domain is richer than all the area included in the States. The latter contains say forty million inhabitants. But there is a country waiting for forty million settlers, and even these would hardly be near enough for neighborhood purposes. All the poor-houses of Europe might be emptied, and indigence made rich, if the inmates could be assisted to reach this land of hope.

## Cider Treated with Sulphite of Lime.

Within a few years sulphite of lime has been used at the moment of fermentation of wine and cider, in order to prevent them from becoming acid. The wine or cider thus treated soon becomes clear and of an agreeable taste. Those who drink it, however, after a short time complain of pains in the stomach, loss of appetite, &c.; this is natural, and may be thus explained: A certain quantity of sulphite of lime is dissolved by the wine or cider, and in a noticeable quantity. Analyses recently made have yielded about 30 centigrammes of sulphite of lime in a pint of cider.

**HARD TO BEAT.**—Cheney Hoskins, Esq., residing in the Fallston neighborhood, says the *Ægis and Intelligencer*, recently killed two hogs, exactly nine months old, which weighed together, after being dressed, 603 pounds. They were Chester Whites, and from stock owned by Messrs. James O. Amos and Wm. Hoskins.



## Unanswerable Arguments.

Established facts are silent arguments which neither pen nor tongue can shake, and it is upon established facts that the reputation of Hostetter's Stomach Bitters, as a health-preserving elixir, and a wholesome and powerful remedy, is based. When witnesses come forward in crowds, year after year, and reiterate the same statement in relation to the beneficial effects of a medicine upon themselves, disbelief in its efficacy is *literally impossible*. The credentials of this unequalled tonic and alterative, extending over a period of nearly twenty years, include individuals of every class, and residents of every clime, and refer to the most prevalent among the complaints which afflict and harass the human family. Either a multitude of people, strangers to each other, have annually been seized with an insane and motiveless desire to deceive the public, or Hostetter's Bitters, for no less than a fifth of a century, have been affording such relief to sufferers from indigestion, fever and ague, biliousness, general debility, and nervous disorders, as no other preparation has ever imparted. To-day, *while the eyes of the reader are upon these lines*, tens of thousands of persons of both sexes are relying upon the Bitters as a sure defence against the ailments which the present season engenders, and their confidence is not misplaced. The local potions which interested dealers sometimes endeavor to foist upon the sick in its stead, are everywhere meeting the fate that is due to fraud and imposture, while the demand for the great vegetable specific is constantly increasing.

## MAMMOTH DENT CORN.

Mr. Balthis, of Corydon, Indiana, proprietor of the Mammoth Dent Corn offers \$50 in premiums as follows: \$25 for the largest and best yield from a two pound package, \$15 for the second largest yield, and \$10 for the third. The reports and sample ears, with the required evidence, to be forwarded to Messrs. H. A. King & Co., publishers of THE BEE-KEEPERS' JOURNAL AND NATIONAL AGRICULTURIST, 240 Broadway, New York, who will award the premiums and announce the same through the columns of their JOURNAL. Send for descriptive circular giving his tory, prices, premiums, &c. Address Isaac N. Balthis, Corydon, Indiana.

**Seed Oats.**—We call attention to the advertisement of F. H. Grupy, offering for sale three different kinds of Seed Oats. The Norway Oats were got of Mr. Ramsdell, direct last year, and the yield, he informs us, "was very fine—200 bushels being gathered from 3 bushels sowing." Mr. Grupy is one of our most reliable citizens, and those desiring seeds can order with the full assurance of getting the pure article.

**Gregory's Retail Catalogue.**—We have received from James J. H. Gregory, Marblehead, Mass., his Annual Calendar and Retail Catalogue of choice Vegetable and Flower Seeds grown and sold by him. It is a very complete catalogue, treating on the different varieties of cabbage, &c., and numerously illustrated. Sent free on application as above.

**The Germantown Telegraph.**—This old and sterling family and Agricultural paper, maintains a freshness that is truly wonderful. Our friend Freas, may indeed congratulate himself upon its appearance typographically, as well as its literature. Its agricultural department is ably conducted, and such is our appreciation of it that he must pardon us for the freedom we take with our scissors. The *Telegraph* is edited and published by Philip R. Freas, Germantown, Philadelphia, at \$2.50 per year—weekly.

## MARYLAND STATE CENSUS.

The following table shows the population of the State in 1870 as compared with 1860, and the increase and decrease in the respective counties:

Counties.	1870.	1860.	Increase.	Dec.
Allegany.....	38,554	28,348	10,206	.....
Anne Arundel.....	24,513	23,900	613	.....
Baltimore city.....	267,599	212,418	55,181	.....
Baltimore co.....	63,059	54,135	8,924	.....
Calvert.....	9,856	10,447	.....	591
Caroline.....	12,121	11,129	992	.....
Carroll.....	58,710	24,533	4,177	.....
Cecil.....	25,888	23,862	2,026	.....
Charles.....	15,751	16,517	.....	766
Dorchester.....	19,598	20,461	.....	863
Frederick.....	47,637	46,591	1,046	.....
Harford.....	23,348	23,415	.....	107
Howard.....	14,167	13,338	829	.....
Kent.....	17,256	13,267	3,989	.....
Montgomery.....	20,572	18,322	2,250	.....
P. George's.....	20,957	23,377	.....	2,370
Queen Anne's.....	15,033	15,961	.....	928
St. Mary's.....	15,089	15,213	.....	124
Somerset.....	18,300	24,992	.....	6,792
Talbot.....	16,157	14,795	1,352	.....
Wicomico.....	15,844	.....	15,844	.....
Worcester.....	16,472	20,661	.....	4,189
Washington.....	34,714	31,417	3,297	.....
Total.....	781,055	768,049	110,726	16,730

## HOUSEHOLD WEIGHTS AND MEASURES.

Wheat flour, one pound is one quart. Indian meal, one pound two ounces is one quart. Butter, when soft, one pound one ounce is one quart. Loaf sugar, broken, one pound is one quart. White sugar, powdered, one pound one ounce is one quart. Best brown sugar, one pound two ounces is one quart. Eggs, average size, ten are one pound. Liquid measure, sixteen tablespoonfuls are half a pint.

**The Southern Planter and Farmer.**—A novel feature of the new volume of this valuable Agricultural monthly is the publication of a series of maps of the counties of Virginia, prepared by Major Jed. Hotchkiss, the eminent Top. Engineer. The January No. contains a map of Louisa County. The Planter and Farmer is published by Ferguson & Rady, Richmond, at \$2 per year.

**Patterson Stock.**—S. T. C. Brown, Esq., Sykesville, Md., having purchased the celebrated Devon Herd of the late George Patterson, of "Springfield," Md., offers for sale young Bulls and Heifers. The Patterson herd is well known throughout the country for its excellence and purity. See advertisement.

**Belmont Stock Farm.**—S. W. Ficklin, Esq., of Virginia, advertises for sale Percheron and Black Hawk Morgan Stallions, Riding Horses and Fillies, Short Horn Bulls, Calves and Heifers, Boars and Sows of the Albemarle and Chester White stock. Mr. Ficklin is too well known as a breeder of choice stock to need commendation from us.

**Catalogue.**—From Kemp & Kerr, Denton, Caroline County, Md., their Catalogue for Spring of 1871 of Trees, Vines, Plants, &c.

A farmer who runs his farm without a record of expenses and the cost of different crops, is like a ship without a compass or a log book.

A good name is better than riches.

*Written for the Banner of the South and Planters' Journal, published at Augusta, Ga., Nov. 26, 1870.*

## AN EXPERIMENT WITH EIGHT DIFFERENT KINDS OF FERTILIZERS.

BY GEORGE C. DIXON, CAMERON, GA.

There are now in the market for sale about forty different kinds of Fertilizers. Each of these are supported by a long list of certificates from various planters, who testify that they have used them—some one and some another—but all bear witness to good results. No proprietor or agent is without his list of certificates to show that his particular Fertilizer is as good, if not better, than any other. Now, how are planters to know which is the best? Notwithstanding these long lists of certificates, we find some farmers, yea, too many, who find that by practical application, after giving them a fair trial, prove them to be worthless fertilizers (or so-called fertilizers) and come out in debt and denounce all guanos.

Now, if farmers would put themselves to a little trouble we can soon find out the standard or best fertilizers, but to ascertain this we should try different kinds of fertilizers, side by side, and *publish the results of these tests, giving to the farming community the method of application, mode of culture, and the character of the land planted.* Even if but one kind is used the result should be made public. Such a policy will enable the farmer to gain information, not only as to the best and most reliable fertilizer applicable to the different soils, but of the best method of application. If any particular fertilizer proves worthless, *publish it*, but state at the same time the character of the land and the methods of application and cultivation. By so doing, farmers will be able to judge as between the Fertilizer and the experimenter; and thus be enabled to decide between the various kinds of fertilizers; and what is more, to determine whether the manufacturer or manipulator is deteriorating his products by adulteration, to reap fraudulently a rich harvest of wealth, or is perfecting his manufacture year by year.

This year I have tried seven different kinds of fertilizers, side by side, viz:

1. Bradley's Super-Phosphate of Lime.
2. Whann's Raw Bone Super-Phosphate.
3. Wilcox, Gibbs & Co.'s Manipulated Super-Phosphate of Lime.
4. Patapsco Guano.
5. My own Compound.
6. Soluble Pacific Guano.
7. Mapes' Super-Phosphate of Lime.

The land was a very poor old field, clay near the surface. It was planted in cotton last year, but

"lay out" the year before. The rows were three feet three inches apart. I did not break the land "flush," but ran furrows between the old rows, with an eight inch shovel plow, made with two wings in order to leave the furrow well open. This shovel plow ran twice in the same furrow. Then I drilled the Guano in this furrow at the rate of 320 pounds to the acre, ran a No. 10 cast-iron plow (Yankee) about eight inches deep on each side, covering the Guano. This left a ridge on the old bed where the old cotton stalks stood, about 7 or 8 inches wide, which I "burst out" by running my two-winged shovel plow very deep. The land was planted April 10th and cultivated with the sweep-plow and hoe. The rows of this experimental field were one acre, or seventy yards long.

The following is the result. I picked from—

Row manured with Whann's Raw Bone Super-Phosphate 12 $\frac{3}{4}$  pounds.

Row manured with Patapsco Guano 9 $\frac{3}{4}$  pounds.

Row manured with my own compound 9 $\frac{3}{4}$  pounds.

Row manured with Soluble Pacific 9 $\frac{3}{4}$  pounds.

Row manured with Bradley's Super-Phosphate, 9 pounds.

Row manured with Wilcox, Gibbs & Co.'s Manipulated 9 pounds.

Row manured with Mapes' Super-Phosphate 6 $\frac{3}{4}$  pounds.

Row unmanured in any manner 2 $\frac{1}{2}$  pounds.

As before stated, the land was very poor as will be inferred by the yield of the unmanured row—2 $\frac{1}{2}$  pounds. As the rows were three feet three inches apart, there would be sixty-four rows to the acre. Now, as Whann's Raw Bone Super-Phosphate stands ahead in this experiment, let us make a calculation as to whether or not it would pay, and if it would pay, how much?

One row manured with Whann's Raw Bone Super-Phosphate gave a yield of 12 $\frac{3}{4}$  pounds. This multiplied by 64 (the number of rows to the acre, at the distance taken) gives 816 pounds per acre. The row without guano made 2 $\frac{1}{2}$  pounds, which, multiplied as before by 64, gives 144 pounds per acre. Deducting 144 from 816 leaves 672 pounds, as the net gain by the use of Whann's Raw Bone Super-Phosphate. This 672 pounds of seed cotton will make at least 200 pounds of lint, which at 15 cents per pound, will give thirty (30) dollars.—This sum is the gain per acre of an acre manured with Whann's Raw Bone Super-Phosphate over and above that which an unmanured acre would yield. But we must pay for the guano out of this \$30. The cost of this (including hauling, &c.,) was \$12.80; deducting this sum from \$30 leaves \$17.20, as the clear profit—the return for the use of Whann's Raw Bone Super-Phosphate.



But it must be borne in mind that we had 672 pounds of seed cotton after deducting the amount made upon the unmanured acre; and in reducing it to lint we threw off 472 pounds for the weight of seed. This will give us at least  $18\frac{3}{4}$  bushels of cotton seed, which, at 20 cents per bushel, will give us the further sum of \$3.70. Adding this to the above sum of \$17.20 gives \$20.90 as the whole gained per acre by the use of Raw Bone Super-Phosphate. Besides this we may expect some gain in the crop of the succeeding year.

I will not be at the trouble now of making a like calculation as to all the different Fertilizers used in my experimental patch, as any one may do it as I have given the yield of the different kinds, the amount of yield without the use of fertilizers, and the number of acres to the row.

I feel confident that the Mapes repaid me, notwithstanding that it gave the smallest yield, and I consider it the poorest of the seven different fertilizers used. My motto is: Try all things; hold fast to that which is good. I used nothing but Whann's Raw Bone Super-Phosphate (I mean of commercial fertilizers) in my general crop this season: and I am so well pleased that I shall use it more freely in future. But at the same time I expect to raise all the manure on my farm, and would recommend every farmer to do likewise.

I used Whann's Raw Bone Super-Phosphate in different quantities per acre, and I found that where the largest quantity was applied, the result was most satisfactory—it paid the best. †

**PLASTER AND SALT ON CLOVER.**—A farmer reports that, for purposes of experiment, he divided a cloverfield into plots of thirty feet in width, grouping these divisions in series of three plots each. On the first plot in each series plaster was sown broadcast, two bushels per acre, at a cost of \$1. On the second plot, common ground salt, two bushels per acre, at a cost of \$2.50. On the third, one bushel of plaster, and one of salt, mixed, per acre, at a cost of \$1.75. The order of excellence in product was as follows, beginning with the best: salt and plaster mixed; plaster; salt.

**Seed and Fertilizer Manual.**—We have received from E. Whitman & Sons, Seedsmen, Baltimore, their Seed and Fertilizer Manual and Price List for 1871, containing practical directions for the cultivation and management of the garden and other useful information, with a treatise on fertilizers. Send for a copy.

**SAFE AND SURE REMEDY FOR LICE ON CATTLE.**—To one gallon of soft water add one pint of soft soap, and boil them together; then add one ounce of arsenic, and stir till well mixed; after this add another gallon of soft, cold water, and it is fit for use. The soap neutralizes the poison and renders it harmless to the cattle, but a dead-shot to lice and their eggs.

## Corn in Drills and in Hills.

At the Michigan Agricultural College, in 1868, two plots of land were set apart, substantially equal in character of soil, each measuring forty-eight rods in length by two in width. The ground was plowed May 5, and manure was spread evenly and worked in by cultivator and harrow. Yellow Dent corn was planted May 21, in rows four feet apart; one of the plots being planted in hills, the other in drills. The plots were cultivated and hoed June 15, and again July 7, the plants being thinned so as to leave the same number of stalks on each plot, including an equal distribution of plants throughout the subdivisions of the plots. As nearly as possible, each of the two plots received the same amount of labor in cultivation. The stalks were cut at the bottom September 17, and stocked in good order. Three weeks afterward the corn was husked and weighed. The stalks were then again carefully stocked, and were hauled and weighed, in good condition, October 12. The corn on the portion planted in hills was rather better in quality than on that planted in drills. But the drilled portion produced  $74\frac{1}{2}$  bushels of shelled corn and three tons of stalks to the acre, against  $65\frac{1}{2}$  bushels of corn and  $2\frac{3}{4}$  tons of stalks per acre produced by the portion in hills.

**BAT GUANO.**—The excrements of bats from Egypt have recently become an article of trade as a sort of guano for manurial purposes. An analysis of the composition shows in 100 parts, urea, 77.80; uric acid, 1.25; kreatine, 2.55; phosphate of soda, 13.45; water driven off at 100° centigrade, 3.66; substances insoluble in water, 0.575—total 99.285

**PLANT LOUSE.**—It is estimated that the progeny of an *Aphis* (plant louse) in a single summer, will amount to a quintillion (1,000,000,000,000,000,000). They reach maturity in a fortnight, produce 100 offspring, and reproduce spontaneously, to the ninth generation.

## PATTERSON DEVONS.



Having become the owner by purchase of the celebrated "Devon Herd" bred and owned by the late George Patterson, deceased, of Springfield, Maryland, I now offer sale YOUNG BULLS and HEIFERS of from 8 months to  $2\frac{1}{2}$  years old, and shall endeavor to give satisfaction to all purchasers. For further information, address

S. T. C. BROWN,  
Sykesville, Md.

feb-3.\*

BALTIMORE MARKETS---Feb. 1.

Prepared for the "Maryland Farmer" by GILLMORE & Son, Produce Commission Merchants, 194 W. Pratt st.

[Unless when otherwise specified the prices are wholesale.]

ASHES.—Pot steady at \$6.75@7.25.  
 APPLES.—Firm; \$4.50@5.00 per barrel.  
 BEESWAX.—Inactive at 28@30 cts. per lb.  
 BROOM CORN.—Demand higher at 4@6 cts. per lb.  
 BUTTER.—Choice packed is sought after by shippers and prices are firmer; 28@30 cts. being the price for the best Western and Glades; lower grades range from 12@20 cts. neglected. Roll is in good supply with light demand. Choice Yellow sells at 30, and Prime at 25. Good 20; lower grades 15@18 cts. Made over butter only commands grease prices; it will not sell in this market.  
 COTTON.—Since the proposed cessation of hostilities between Germany and France, the market has been quite animated and prices tend upwards. Ordinary 13 cts., Good Ordinary 14½ cts., Low Middling 15 cts., Middling 15½ cts., and Good Middling 16 cts.  
 COFFEE.—Stock light; active demand. Ordinary to Prime Rio, from jobbers, range from 13¼@15¼ cts. Gold duty paid.  
 DRIED FRUITS.—More inquiry for Dried Apples, ordinary to good, 4@5 cts.; Sliced, 6@8 cts. Peaches firm; quarters unpeeled 7½@8 cts.; ditto halves, 10@10½ cts.; peeled 14@20 cts. Cherries pitted 14@18 cts.; unpitted 4@6 cts. Whortleberries 11@12 cts. Blackberries 9@9½ cts.  
 EGGS.—The market for some ten days before Christmas was overstocked with fresh, and prices were nominal. Pickled became unsaleable; prices declined heavily and consumption became very large. The late severe snow storms has checked the supply and the old stock being pretty well worked off, prices are advancing. Pickled rate at 10@18 cts., and Fresh 24@25 cts. per doz.  
 FERTILIZERS.—No change to note. We quote:  
 Peruvian Guano—gold.....\$58 ½ ton of 2000 lbs.  
 Orchilla and Rodonda..... 30 ½ ton "  
 Turner's Excelsior..... 65 ½ ton "  
 Turner's Ammo. S. Phos..... 55 ½ ton "  
 E. F. Coe's Ammo. S. Phos..... 55 ½ ton "  
 Ober's Phospho-Peruvian Guano 65 ½ ton "  
 Ober's Super-Phosphate of Lime 55 ½ ton "  
 Soluble Pacific Guano..... 60 ½ ton "  
 Patapaco Guano..... 60 ½ ton "  
 Flour of Bone..... 60 ½ ton "  
 Andrew Coe's Super-phosphate 60 ½ ton "  
 Baugh's Raw Bone S. Phos..... 52 ½ ton "  
 Magnum Bonum Soluble Phos... 56 ½ ton "  
 Ruth's "Challenge" Sol. Phos. 60 ½ ton "  
 Zell's Raw Bone Phosphate..... 56 ½ ton "  
 Rhodes' do..... 50 ½ ton "  
 Mapes' do..... 60 ½ ton "  
 Bone Dust..... 45 ½ ton "  
 Horner's Bone Dust..... 45 ½ ton "  
 Dissolved Bones..... 60 ½ ton "  
 Baynes' Fertilizer..... 40 ½ ton "  
 "A A" Mexican Guano..... 30 ½ ton "  
 "A" do. do..... 30 ½ ton "  
 Moro Phillips' Super-Phosphate 56 ½ ton "  
 Wh ann's Raw Bone Super Phos. 56 ½ ton "  
 Md. Fertilizing & Manufacturing Co's Ammoniated Super-Phosphate } .55 ½ ton  
 Fine Ground Bone Phosphates } .30 ½ ton  
 Plaster.....\$2.25 per bbl.  
 FLOUR.—Shippers and speculators are in the market and prices are looking upward. Stock light—West India shippers are coming back to this market to make their purchases and several lots have been taken within the past few days for those Islands.  
 City Mills Super..... 6.75 @ 7.25  
 " Extra..... 7.00 @ 8.00  
 " Family.....\$10.75  
 Howard Street Super..... 5.50 @ 6.00  
 " Extra..... 6.25 @ 6.75  
 " Family..... 7.50 @ 8.50  
 Western Super..... 5.50 @ 6.00  
 " Extra..... 6.25 @ 6.75  
 " Family..... 7.00 @ 8.50  
 GRAIN of every description is in light receipt and market firmer. Wheat, in sympathy with flour, is advancing in price, and ranges, for Red \$1.50@1.90, and White \$1.60@2.00 per bus. Corn—82@90 cts. and Oats 55@56 cts.  
 MILL FEED.—Active. Brownstuf 21@23 cts.; Light Middlings 28@29 cts. and heavy 40@50 cts.

MOLASSES—Stock light; New Orleans is again taking the lead in preference to all syrups and is selling in this market at 60@74 cts. per gal; Porto Rico and English Islands 30@45 cts.; Muscavados 22@30 cts. and Cuba clayed 21@23 cts.  
 PROVISIONS.—Very active; prices advancing. Hams 17½@18 cts.; Shoulders 10½@11 cts. and Sides 12½@13 cts.  
 POULTRY.—Light receipts and active market. Dressed Chickens and Ducks 15@17 cts. per lb.; ditto Turkeys 18@20 cts.  
 RICE—Receipts light with more inquiry; 7½@8 cts.  
 SALT.—Ground Alum \$1.75; Fine \$2.80 per sack; Turk's Island 50 cts. per bush.  
 SEEDS.—Clover, demand good at \$7.25@7.50 per bush; Timothy \$6.00; Flax \$1.90 per bushel.  
 SUGAR.—Stock light; market firm. We quote grocery grades Cuba 10@10½ cts.; Porto Rico 11 cts.; New Orleans 10@11 cts. and Demarara 11@12 cts.  
 WHISKEY.—Firm at 92@95 cts.

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So great has been the success of publishing this paper since it was begun in the City of New York, on the 1st day of January, 1869, that we are enabled to give the people of this country, a better paper for 1871, than was ever before printed in America.

The circulation of THE DEMOCRAT has more than doubled during the past year, and every Democratic victory, no matter in what part of the country occurring, brings THE DEMOCRAT more subscribers, more friends, defenders, readers and circulators. We accept this rapid and constant increase of circulation as a proof that our good intentions, earnestness and determination to press forward the fight in behalf of Democracy everywhere are appreciated, and thus we are stimulated and encouraged to greater exertions.

To make THE DEMOCRAT readable and interesting the coming year, Mr. Pomeroy, the editor and proprietor, who is now relieved of the work of editing, managing and superintending his DAILY DEMOCRAT in the city of New York, will devote his entire time and attention to the Weekly. Possessed of abundant capital, unusual facilities for obtaining news, with a newspaper experience well known to the world, the public may rest assured that from this time henceforth THE DEMOCRAT will be more vigorous, pointed, determined and powerful than ever before. Backed, as he is, by nearly a quarter of a million of subscribers and more than a million of readers—supported by the Democrats and workmen of every State and Territory—in communication with the people everywhere and possessed of thousands upon thousands of letters giving him information and items of fact and incident occurring in different parts of the country—he enters anew upon the work in which he is engaged, and to which he has pledged his life, his fortune, his constant care and individual attention, from this time till we shall have in this country a Democratic President and administration, and a complete, effective, and thorough Democratic organization, pledged to the protection of labor and industry, to the encouragement of honesty, and to the defense and extension of Democratic principles.

The editorial articles for THE DEMOCRAT the coming year will be more than ever pointed, earnest, truthful and convincing, as years of education and experience, governed by a knowledge of facts obtained from actual observation, enable a writer to give his thoughts with more clearness and power in each unceasing attempt.

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purpose of obtaining information and spreading it before the public; Live editorial comments on men, measures, manners, and customs; Pomeroy's Social Chats with Friends and correspondents, which has become such a feature, exclusive with THE DEMOCRAT; attempted by other papers only to be given up after a few weeks' work thereon, but continued from week to week in THE DEMOCRAT, always with growing interest; an unusually full and interesting Masonic Department, under the editorship of illustrious brother, F. G. Tisdall; an Agricultural Department much better than ever before; a Mechanical Department, wherein will be found each week something of especial interest to all classes of mechanics; Financial, Monetary and Market Report, unusually full, complete and reliable; Letters from our correspondents in this and other countries; New York gossip concerning city manners, customs and happenings in the musical, artistic, theatrical and social world—a new feature in THE DEMOCRAT; a carefully edited fashion department; Happenings here and there in different parts of the country, or items caught on the fly, published under the head of Brick Dust; Humorous, satirical and burlesque sketches of Life, by "Brick," in the vein of his book of "Nonsense," of which over a hundred thousand copies have been sold by Carleton, the celebrated New York publisher; Items of satire, news, sarcasm, burlesque, ugliness and impudence; Pomeroy's Pictures of New York by Night, from actual observation; full columns every week of new, live and interesting reading matter, original, and written expressly for THE DEMOCRAT; nothing will be left undone or unattempted to make this paper the most readable ever published in the United States; in politics THE DEMOCRAT will be bold, earnest, and, to use a word that has become national, Red Hot for the Right. It will make a continued and earnest war against the bond interest of this country, till taxation shall be made equal, or till the people shall rise in their might, and, through a revolution, escape from the bondage they are now in for the support of the thieves and robbers who control the government, which was originally the best, but has become one of the worst the world ever saw. THE DEMOCRAT will labor for the restoration of the government and the principles of Democracy; not for its reconstruction, for the benefit of an aristocracy not in sympathy with honesty or labor.

Thankful to those who in every State in the Union, and almost every county in the United States, have so generously sustained THE DEMOCRAT, before its removal to New York, and since, we offer the following premiums—as an evidence of gratitude to those who forward, from time to time subscribers:

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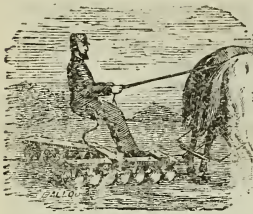
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Result of Analysis of a Sample of Animal Matter, presented me by R. W. L. Rasin, Esq.

Ammonia Act. and Potent.....9.055

G. A. LIEBIG.

*Analytical Laboratory, No. 32 South Street, Baltimore, Md., December 3d, 1870.*

Sample of Nitrogenous Matter received Nov. 25th, 1870, from R. W. L. Rasin, Esq.

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WM. P. TONRY,

Analytical Chemist, (formerly of the Surgeon Genl's Office, Washington, D. C.)

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June-4t

## INTERESTING TO LADIES.

The following extracts are from the testimony, taken under oath, in a recent case pending before the United States Patent Office, upon the actual merits of the

### GROVER & BAKER SEWING MACHINE,

and its relative merits as compared with other machines:

Mrs. Dr. McCready, says:

"I have used, for nine years, a GROVER & BAKER MACHINE, and upon it I have done all kinds of family sewing for the house, for my children and husband, besides a great deal of fancy work, as braiding, quilting, and embroidering. During all that time my machine has never needed repair, except when I had the tension altered, and it is as good now as it was the first day I bought it."

"I am acquainted with the work of all the principal machines, including Wheeler & Wilson's, Finkle & Lyon's, Wilcox & Gibb's, Ladd & Webster's, the Florence machines, and Sloat's machines, besides a number of ten-dollar ones; and I prefer the Grover & Baker to them all, because I consider the stitch more elastic. I have worked now in the house that was done nine years ago, which is still good; and I have never found any of my friends who have used the other machines able to say the same thing

Mrs. Dr. Whiting gives the following reasons for the superiority of the Grover & Baker machines over all others:

"The elasticity of the stitch, and ripping when it is required; and also the stitch fastening itself, as you leave off; and also, the machine may be used for embroidering purposes; and therein consists the superiority over other machines.

"The stitch will not break when stretched, as the others do, and neither does it draw the work.

"I find this stitch will wear as long as the garments do—outwear the garments, in fact.

"I can use it from the thickest woolen cloth to Nansook muslin."

Mrs. Alice B. Whipple, wife of Rev. Mr. Whipple, Secretary of the American Missionary Association, testifies:

Q. As the result of your observation and experience, what machine do you think best as a general family instrument?

A. The Grover & Baker, decidedly.

Q. State the reasons, such of them as occur to you, for this opinion.

A. I think the stitch is a stronger stitch than that of any other machine I have used, and it seems to me much more simple in its management than other machines; one great advantage is the ease with which the seam is ripped when necessary to do so; and I think that the work, by an experienced person, on a Grover & Baker machine, is better than the work by such person on any other machine; it requires more skill to work other machines than the Grover & Baker.

Mrs. General Buel says she prefers the Grover & Baker machine over all others.

"On account of its durability of work, elasticity of stitch and strength of stitch. It never rips.

"It is preferred over all others; it is very easy in its movements, and very easily adjusted, and very simple in its construction.

"We can accomplish more in one week, by this sewing machine, than we can in a month by hand-sewing."

Mrs. Dr. Watts, says:

"I have had several years' experience with a Grover & Baker machine, which has given me great satisfaction. Its chief merit is that it makes a strong elastic

stitch; it is very easily kept in order, and worked without much fatigue, which I think is a very great recommendation. I am not very familiar with any other machine, except a Wheeler & Wilson, which I have had. I think the Grover and Baker machine is more easily managed, and less liable to get out of order. I prefer the Grover & Baker, decidedly."

Mrs. A. B. Spooner, says:

"I answer conscientiously, I believe it to be the best, all things considered, of any that I have known.

"In the first place, it is very simple and easily learned; the sewing from the ordinary spool is a great advantage; the stitch is entirely reliable. It does ordinary work beautifully, and the embroidery stitch. It is not liable to get out of order. It operates very easily. I suppose I can sum it all up by saying it is a perfect machine.

"I have had occasion to compare the work with that of other machines. The result was always favorable to the Grover & Baker machine."

Mrs. Dr. Andrews, testifies:

"I prefer it to all other machines I have known anything about, for the ease and simplicity with which it operates and is managed; for the perfect elasticity of the stitch; the ease with which the work can be ripped, if desired, and still retain its strength when the thread is cut, or accidentally broken; its adaptation to different kinds of work, from fine to coarse, without change of needle or tension."

Mrs. Maria J. Keane, of the house of Natalie, Tilman & Co., says:

"Our customers all prefer the Grover & Baker machine, for durability and beauty of stitch."

Mrs. Jennie C. Croly, ("Jenny June,") says:

"I prefer it to any machine. I like the Grover & Baker machine in the first place, because if I had any other I should still want a Grover & Baker; and, having a Grover & Baker, it answers the purpose of all the rest. It does a greater variety of work, and it is easier to learn than any other. I like the stitch because of its beauty and strength and because, although it can be taken out, it don't rip, not, even by cutting every other stitch."

The foregoing testimony establishes beyond question:

1. The great simplicity and ease of management of the Grover & Baker machines.

2. That they are not liable to get out of repair.

3. That a greater variety of work can be done with them than with other machines.


4. That the elasticity of the stitch causes the work to last longer, look neater, and wear better, than work done on other machines.

5. That the facility with which any part of the seam can be removed when desired is a great advantage.

6. That the seam will retain its strength even when cut or broken at intervals.

7. That, besides doing all varieties of work done by other sewing machines, these machines execute beautiful embroidery.

Over one hundred other witnesses in the case above referred to testified to the superiority of the Grover & Baker machines in the points named in substantially the same language, and thousands of letters have been received from parts of the world, stating all the same facts.

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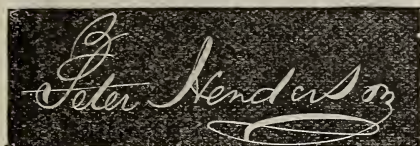
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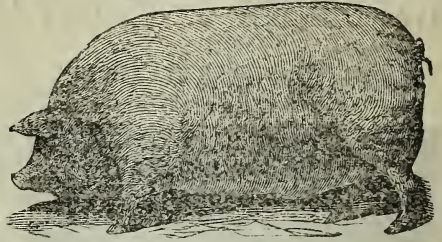
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
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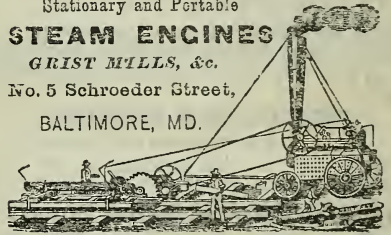
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

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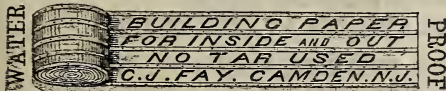
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
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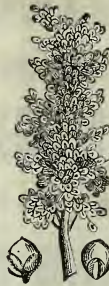
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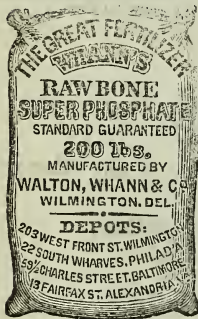


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
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

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